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ABSTRACT

A study examined the effects of sex-typed content and sex role preference on 87 fifth grade boys' and 64 fifth grade girls' reading material preferences. It also explored how high- and low-rated sex-typed reading content and students' sex and sex role preferences influenced reading comprehension. After reading the sex-typed content, which consisted of two stories about male pilots and two stories about female dancers, subjects responded to like-dislike scales and accompanying multiple-choice comprehension tests. Two-way and three-way ANOVAs were used to analyze the data. The results indicated that children (1) who might be identified as having different sex role preferences showed similar like-dislike reactions and comprehension levels when reading sex-typed content; (2) preferred reading sex-appropriate content, (3) comprehended sex-typed material with equal competency, and (4) were affected only minimally by reader preference for content when reading sex-typed content. (Appendixes include samples of reading materials and evaluation instruments.) (HTH)

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Children's Sex Role Preferences and Their Like-dislike Ratings and Comprehension of Sex-Stereotyped Reading Content

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A Thesis

presented to

The Department of Curriculum Studies

College of Education

and

The College of Graduate Studies and Research

The University of Saskatchewan

in partial fulfillment of the requirements

for the degree of

Master of Education

by

Sandra Faye Altman Gardiner

May, 1983

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S. Gardiner

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ABSTRACT

The purpose of the present study was two-fold: Firstly it sought to determine the effect of sex-typed content and sex role preference on fifth-grade boys' and girls' like-dislike ratings of reading material. Secondly, the study explored the effects of high- and low-rated sex-typed content, sex, and sex role preference on the reading comprehension of fifth-grade boys and girls as measured by multiple-choice questions. The sex-typed content consisted of two stories about male pilots and two stories about female dancers. Comprehension was assessed by 26 multiple-choice questions completed after reading each story. Like-dislike rating of each story was done on 6-point like-dislike scales. The sex role preferences of the boys and girls were determined by their responses on Rosenberg and Sutton-Smith's M-F Scales.

Each of the 87 boys and 64 girls read all four stories and responded to the like-dislike scales and accompanying comprehension tests for each story, thus giving this study a repeated measures design.

Two-way and three-way ANOVAS were used to analyze the data. The following conclusions were drawn based on the results of that analysis:

1. Children who might be identified as having different sex role preferences show similar like-dislike reactions and comprehension levels when reading sex-typed content.

2. Fifth-grade children tend to like reading sex-appropriate content better than material considered more appropriate for the opposite sex.

3. Fifth-grade boys and girls comprehend sex-typed material with equal competency.

4. The comprehension of boys and girls reading sex-typed content is affected minimally by the degree to which the content is liked or disliked.

CHAPTER ONE

INTRODUCTION TO THE STUDY

Researchers report that psychological differences between boys and girls are often no greater than differences within each sex (Clark, 1959; Lamkin, 1967; Rosenberg & Sutton-Smith, 1972). Johnson and Greenbaum (1982) stress in their review of the literature on boys' and girls' reading interests that researchers should be aware that within each sex a wide variety of interests are found. Downing, May and Ollila (1982), in discussing future research into sex differences and cultural expectations in reading, cautioned that "it should be kept in mind that, as with other sex related differences, the differences noted between sexes in reading are generally small in comparison to the range of differences within a sex. . ." (p. 41).

Lamkin (1967) noted that in the elementary school sex differences are found in standardized test achievement, teacher-assigned grades, teacher-judged behavior acceptability and interests. There is evidence that considerable overlapping exists between the sexes on these variables indicating a wide variation within each sex. Maccoby (1966) acknowledged the need for greater understanding of the extent, origin, and development of sex differences, within, as well as between the sexes. Consequently, it seems sensible to explore the degree of variation within each sex in addition to variation between the sexes.

Klein (1968) found highly significant differences between sexes when boys and girls were asked to rate sex-typed stories. Thus overall, girls preferred female content and boys preferred male content, but he also reported that 17% of boys favored the female content. A possibility exists that the children of each sex who preferred the opposite sex content are different in some respect from those who preferred the same sex content. In other words, it may be possible to identify sex groups who will be affected differently by sex-typed materials.

The literature indicates that reading preferred content usually influences comprehension (Klein, 1968; Klein, 1978; Metz, 1978; Robertson, 1980). If reading preferred content is, in fact, related to comprehension, then it logically follows that children who prefer sex-inappropriate material may be affected also by reading that material.

Dwyer (1974) sought to examine the differences between sex role standards, and reading and arithmetic achievement. She defined sex role standards as the extent to which the individual considers particular activities appropriate for males or females. In reviewing the literature, she found that sex differences have varied with age, socioeconomic status, IQ and the specific subskill being measured. She concluded that "biological sex and liking or disliking a subject area were insufficient explanations for observed patterns of sex differences in achievement" (p. 811). Dwyer hypothesized instead that sex differences may be related to sex role standards.

The results of a group of studies in the literature suggest that sex differences in comprehension are affected by the reading of sex-typed content. Another body of literature points out that within-sex differences in reading may exceed those found between sexes. Yet few studies have chosen to explore the effect of within-sex differences on reading and none, with the exception of the present study, have examined the effects of these differences on children's like-dislike ratings and comprehension of sex-typed content.

Statement of the Problem

The purpose of the present study was two-fold: Firstly it sought to determine the effect of sex-typed content and sex role preference on fifth-grade boys' and girls' like-dislike ratings of reading material. Secondly, the study explored the effects of high- and low-rated sex-typed content, sex, and sex role preference on the reading comprehension of fifth-grade boys and girls as measured by multiple-choice questions.

The specific questions this study answers are:

1. How do fifth-grade boys and girls react to sex-typed content in terms of liking or disliking it?

2. How do the sex role preferences of boys and girls affect their likes and dislikes in sex-typed content?

3. How does liking or disliking story content affect the reading comprehension of boys and girls?

4. What effect does the sex of the reader have on children's reading comprehension?

5. What are the effects of boys' and girls' sex role preferences on their reading comprehension?

Definition of Terms

Like-dislike Rating—An estimate of response toward sex-typed reading passages as measured by a 6-point like-dislike scale.

Comprehension—the number of correct answers on the multiple-choice test following each story.

Sex-typed Content—reading material depicting a female main character in a traditional female occupation and a male main character in a traditional male occupation.

Traditional Female Occupation—an occupation where the greater number of participants are shown by the Canadian census to be female.

Traditional Male Occupation—an occupation where the greater number of participants are shown by the Canadian census to be male.

Sex Role Preference—sex role preference and sex role identity have been used interchangeably in reference to the same trait (Brown, 1956; Stein, 1971). In research related to reading and achievement, it has most often been referred to as sex role preference (Dwyer, 1974; Stein, Pohly & Mueller, 1971; Strock, 1978). For the purposes of this study, the term sex role preference will be used and defined as the conscious sex-typed behaviors which the individual perceives as the preferred or more desirable behavior.

For the purposes of this study, boys' and girls' masculinity-femininity (M-F) ratios as determined by Rosenberg and Sutton-Smith's Masculinity and Femininity Scales (M-F Scales) will be ranked as follows:

Most Feminine Sex Role Preference—those girls whose ratios fall in the upper third of all girls' M-F ratios.

Least Feminine Sex Role Preference—those girls whose M-F ratios fall in the lower third of all the girls' ratios.

Most Masculine Sex Role Preference—those boys whose M-F ratios fall in the upper third of all boys' ratios.

Least Masculine Sex Role Preference—those boys whose M-F ratios fall in the lower third of all the boys' ratios.

Mixed Sex Role Preferences—those girls obtaining M-F ratios in the middle third of all girls' M-F ratios and those boys obtaining M-F ratios in middle third of all boys' M-F ratios.

Hypotheses

1. There will be no significant mean differences among girls with most feminine sex role preferences, mixed sex role preferences and least feminine sex role preferences in their rating of sex-typed content.

2. There will be no significant mean differences among boys with most masculine sex role preferences, mixed sex role preferences, and least masculine sex role preferences in their rating of sex-typed content.

3. There will be no significant mean difference in comprehension on high-rated content and comprehension on low-rated content for both boys and girls.

4. There will be no significant mean difference in comprehension scores on male and female content among 1) least feminine, most masculine boys, 2) mixed girls, mixed boys, and 3) most feminine girls, least masculine boys.

Assumptions and Limitations of the Study

Assumptions

1. The readability of the stories and multiple-choice questions are suitable for average fifth-grade students.

2. Rosenberg and Sutton-Smith's Masculinity and Femininity Scales measure sex role preference and responses to the scales will vary according to the subject's sex role preference.

Limitations

The subjects used in this study consisted of fifth-grade students from two rural school divisions in west-central Saskatchewan. To the extent that these divisions are typical of rural areas, the results of the investigation may be generalized.

Measurement of comprehension was limited to the results of tests (prepared for another study) which mainly measured recognition of factual knowledge. Thus only one facet of comprehension was assessed. Rating of response toward sex-typed passages was measured with a single 6-point like-dislike scale, tapping only one aspect of response.

CHAPTER TWO

A REVIEW OF THE LITERATURE

Sex Role Preference

The assumption of inevitable differences between the sexes can be said to be a typological error (Rosenberg & Sutton-Smith, 1972). In other words, the view that those who are male should always be masculine and those who are female should always be feminine is typological in the sense that the population is divided into those who are either one type or the other. This typology may be considered erroneous because according to Rosenberg & Sutton-Smith "psychologists generally do not find such simple classifications a valid way of handling differences in human personality" (p. 2). Research indicates that males and females differ at least as much from one another as they do from the opposite sex (Clark, 1959; Downing, May & Ollila, 1982; Johnson & Greenbaum, 1982; Rosenberg & Sutton-Smith, 1972).

The theories of Jenkin and Vrough (1969) appear to support those of Rosenberg and Sutton-Smith in this respect. Jenkin and Vrough (1969) have observed that it is not sufficient to select males and females as criterion groups for the study of masculinity and femininity without acknowledging variations within the two sex groups. In the preamble to their research, Jenkin and Vrough proposed that the terms male and female should not be equated with masculinity and femininity. In addition, they purport that within the sexes "males may be ordered upon a continuum having reference to greater or lesser

masculinity and females may be ordered upon a second continuum having reference to greater or lesser femininity" (p. 680).

Measurement of Sex Role Preference

Rosenberg and Sutton-Smith (1972) insist that one test is unlikely to be able to measure the extremely diverse phenomena that psychological masculinity-femininity appears to be. Thus masculinity and femininity attitude tests need not and do not represent all the sex differences that may be found in a culture. Instead, they reflect those conscious sex-typed interests that are more easily verbalized (Kohlberg, 1966).

About a decade earlier, Rosenberg and Sutton-Smith (1960) observed that participation in games is one way in which our children learn the sex role behaviors deemed appropriate by our society. Logically, then the differences in games chosen by boys and girls will reflect the behaviors they perceive as appropriate for their own sex. The work of other researchers support this point of view (Lehman & Witty, 1927; Gump & Sutton-Smith, 1955 as cited in Rosenberg & Sutton-Smith, 1960).

In her review of major tests of masculinity-femininity (herein after M-F) Constantinople (1976) observed that:

> Sex role preference and sex role adoption are more easily measured than either sex-role identity or M-F, as there are fewer steps between the observable characteristics of the individual and the construct inferred. In addition, when looking at sex-role identity and M-F, the potential importance of unconscious factors increases, increasing the difficulties of the measurement process and the specification of appropriate external criteria for validation (p. 30).

A search of the literature shows that there are few tests to determine sex role preference designed for use with children. Over 25 years ago Brown (1956) observed the relative lack of data in the study of M-F patterns in children in comparison with the number of techniques developed for the study of these patterns in adults. More recent work (Maccoby, 1966; Constantinople, 1976) shows that very few more tests for children have been developed since Brown's It Scale for Children (1956).

The M-F Construct: Bipolar or Two-dimensional

Theories on the construct of M-F vary. Earlier M-F tests such as the Terman and Miles M-F test (1936), Brown's It Scale for Children (1956) and The Gough Femininity Test (1952) assume M-F to be "a single bipolar dimension ranging from extreme masculinity at one end to extreme femininity at the other" (Constantinople, 1973, p. 391).

The results of a two-part study executed by Jenkin and Vrough (1969) indicated that the dimensionality of masculinity and femininity do not seem to be bipolar. The responses of 25 adult males and 25 adult females to an adjective checklist indicated that descriptions of the terms "most masculine" and "most feminine" were more similar than they were different and masculinity and femininity were certainly not perceived as opposites.

Constantinople (1973) proposed a theory involving two separable dimensions of masculinity and femininity that varied independently of each other. According to Heilbrun (1976), the advantage of this

theory was that it allowed for another sex role outcome termed psychological androgeny where both masculine and feminine attributes may be incorporated into one personality.

Bem's work (1974) supported Constantinople's proposal. College students rated themselves on a variety of masculine and feminine personality traits. Correlations showed that subjects' perceptions of themselves on the feminine dimension were unrelated to their self-perceptions on the masculine dimension.

In contrast to the previous research (cited above), Asher (1975) in examining the relationship of interest and sex-typing among fifth-grade children obtained results which appeared to indicate that M-F was in fact a single bipolar dimension. Subjects included 30 fifth graders and 36 college students. Half of each classroom rated 25 topics on photographic slides on a 7-point rating scale ranging from "not masculine" to "masculine". The remaining half of each classroom rated the same 25 slides on another 7-point scale which ranged from "not feminine" to "feminine". Mean masculinity and femininity scores were computed for each picture. These means were then correlated to determine if pictures rated masculine by one group tended to be rated not feminine by the other group. The correlation of the two ratings was $r(23)=0.92$, $p<.01$ indicating that the subjects responded to masculinity and femininity as opposite ends of a bipolar dimension.

Thus the literature indicates a gray area in terms of the M-F construct. Research shows that there is nothing conclusive to show that the M-F construct is bipolar or that masculinity and femininity

are in fact two separable dimensions. Stein (1971) concluded that studies analyzing the relationship between sex role preferences and various achievement areas are contradictory, however, Maccoby (1966) indicated that measuring masculinity and femininity as two separate dimensions may yield clearer results.

Definition of Sex Role Preference

The term sex role preference has been inconsistently defined and often confused with other related terms such as sex role adoption and sex role identity. Furthermore, all these terms appear to confound both definitions and measures of M-F. Constantinople (1976) distinguished sex role preference as involving traits and activities one prefers to possess or engage in, and sex role adoption as consisting of traits and activities one actually manifests. Tallichet (1977) differentiated between conscious and unconscious sex role identification. She defined unconscious sex role identification as "the extent to which a person has incorporated into his various response hierarchies responses that the relevant subculture has deemed to be either more appropriate for the male or female" (p. 10). She equated conscious sex role identity with sex role preference and adjustment to culturally defined roles.

Brown (1956) admitted that sex role preference and sex role identity have been used interchangeably in reference to the same trait by many writers including himself. Nevertheless, he emphasized the need to differentiate between the two terms and subsequently defined sex role identification as "the behavior associated with one sex or the

other that the individual introjects and acquires as his own" and sex role preference as "the behavior associated with one sex or the other that the individual would like to adopt or that he perceives the preferred or more desirable behavior" (p. 3).

Stein (1971) conceived sex role preferences or identification as influencing the extent to which an individual will adopt behavior that he views as sex appropriate. She considered masculine and feminine sex role preferences to be separate dimensions. In her study, Stein appeared to use the terms sex role preference and sex role identification to refer to the same entity.

Sex Differences in Reading Achievement

The literature shows that the results of numerous studies dealing with the existence of sex differences in reading achievement have been mixed. Results varied in terms of which areas of reading girls excelled in: vocabulary or comprehension; the type of content they read with greater competence and so on. Since the early Thirties, studies have shown disparities in the reading abilities of boys and girls in favor of girls, (Stanchfield, 1973). St. John (1932) tested 950 students in grades one to four and found that girls markedly excelled boys in reading in the first four grades. A decade later, a massive study of 50,000 third through eighth grade children in 300 schools in Iowa confirmed girls consistently maintained a statistically significant superiority over boys at all grade levels and in all subject areas but arithmetic (Stroud & Lindquist, 1942).

In the early Sixties, Gates (1961) administered the Gates Reading Survey to 6,646 boys and 6,468 girls in grades two through eight. Omitting the grade two data because of the unsuitability of the testing material for that level, he found girls' reading scores in speed and vocabulary were significantly superior to boys' scores in grades three through eight. Furthermore, the gap in boys' and girls' scores increased in the higher grades of this range. In addition, he found the gap in reading comprehension also favored girls, but it did not increase in the higher grades.

Eight years later Dykstra and Tinney (1969) studied sex differences in reading readiness, first grade reading achievement, and second grade reading achievement using 1,659 boys and 1,624 girls from school systems spanning four U.S. States on whom complete data were gathered during grades one and two. Significant sex differences were found favoring girls regardless of the instructional methodology used. Girls were found to be superior, among other areas, in word recognition and comprehension, but in contrast, boys could compete with girls in their knowledge of oral vocabulary.

Two other studies, both done by the same researchers in the Sixties, produced dissimilar results (Parsley, Powell & O'Conner, 1963, 1964). The first study administered the California Achievement Tests to 2,651 boys and 2,369 girls in grades two through eight to determine whether or not sex differences in achievement really existed (Parsley, Powell & O'Conner, 1963). Using the California Test of Mental Maturity to divide the subjects into five IQ groups, the researchers found no significant differences existing between sexes within grade level

or IQ group for any of the achievement areas studied. However in a later study, the same researchers (Parsley, Powell & O'Conner, 1964) used an entire population of 3,551 students in grades four through eight, this time dividing the five IQ groups under-, average- and over-achievers. The results showed that significant sex differences favoring girls do exist within the three achievement levels and where differences did not reach significance, they were still in the direction favoring girls.

Clark (1959) used eight measures of mental ability and six measures of achievement to test a nation-wide, stratified sample of 75 boys and 75 girls to determine if sex differences in ability and achievement were real. Clark matched subjects by grade, age and mental abilities. He concluded boys' and girls' reading and arithmetic achievement were similar.

While examining the effect of interest on comprehension, another group of studies also explored sex differences in reading achievement with contradictory results. Several of these studies found that comprehension scores were not significantly different for either sex (Asher, Hymel & Wigfield, 1978; Belloni & Jongsma, 1978; Dorsel, 1975; Frasher & Frasher, 1979; Saoi, 1976). In contrast, other investigators in this group discovered significant sex differences in comprehension existing within their subjects (Asher, 1975; Asher & Markell, 1974; Bleakley, 1977; Schickendanz, 1973). Other related research which used sex-typed content to determine how interest affects reading comprehension found sex differences in reading comprehension to be minimal (Henry, 1970; Klein, 1968; Klein, 1978; Konschuh, 1971;

Robertson, 1980). These studies showed that when looking at total comprehension scores, sex differences do not appear to exist. However, when scores are examined within specific content types there is evidence of sex differences. Using sex-typed informational selections, Henry (1970) discovered that on male content, boys scored significantly higher than girls and on female content girls' scores were significantly higher than boys' scores. In her study of how the use of illustrations in sex-typed content affects the interest and comprehension of boys and girls, Konschuh (1971) found that boys' scores were higher than girls' scores on inappropriately illustrated male content, but there was no significant difference between girls' and boys' scores on the inappropriately illustrated female content. Klein (1968) using sex-typed materials found that boys' scores were higher than girls' scores on male content, and girls' scores were higher than boys' scores on female content. However, a later study by the same researcher shows that while girls' scores remained superior to boys' on female content, boys' scores were only negligibly higher on male content (Klein, 1979). Robertson (1980) replicated Klein's study (1968) and found that girls' comprehension on female content was significantly higher than boys' comprehension scores on both male and female content. However, boys' scores on the male content significantly exceeded girls' scores on the same content.

Thus, the literature reveals the appearance or nonappearance of sex differences in reading achievement may be an attribute of specific variables. Clark (1959) noted that "for most characteristics the

differences between boys and girls are no greater than the differences found among boys themselves and among girls themselves" (p. 73). This seems to imply that within-sex differences may be a fruitful area for research into the question of sex differences in achievement.

The Influence of Sex Role Standards and Sex Role Preference On Achievement and Achievement Motivation

A review of the literature on sex differences in reading shows that generally girls are considered better readers than boys. Dwyer (1973) in evaluating current theories on sex differences in reading found that these differences have varied with age, socioeconomic status, IQ and the specific subskill being measured. In a later article Dwyer (1974) concluded that "biological sex and liking or disliking a subject area were insufficient explanations for observed patterns of sex differences in achievement" (p. 811).

The extent to which sex role standards influence a child theoretically depends on his or her sex role preferences (Stein, Pohly & Mueller, 1971). Attempts have been made to relate both sex role standards and sex role preference to achievement. One such study dealt directly with the relationship between sex role standards and reading achievement (Mazurkiewicz, 1960). Mazurkiewicz purpose was two-fold: firstly to construct an attitude inventory, then to use this inventory to test the hypothesis that men generally view reading as a feminine activity. The inventory consisted of a variety of activities which subjects were to classify as mostly masculine or mostly feminine. The response of the populations (faculty and 75

college-bound boys and girls to the attitude inventory revealed that while there were ambivalent feelings about some of the other activities responses to reading were uniformly "mostly feminine".

The second part of his study sought to answer among others, the following questions:

1. How do fathers and sons vary in their classification of reading as a mostly masculine or mostly feminine activity?

2. To what extent is attitude toward reading as a masculine or feminine activity related to reading ability as measured by a standardized test?

3. How does attitude relate to reading achievement in terms of being above or below the median of the group?

The final sample consisted of 157 eleventh grade male students. In addition to the inventory, students were given the Otis Quick Scoring Mental Ability Test and the California Reading Test—Advanced.

Results showed that the large majority of fathers and sons considered reading a mostly feminine activity. Boys who classify reading as a feminine activity "tend to be slightly less able in reading than those who classify reading as masculine" (p. 261). When percentages of students who classified reading as masculine or feminine were analyzed in relation to their position above or below the median reading ability it was discovered that those who fell below the median tended to classify reading as more feminine.

The purpose of another study (Gross, 1978) was to determine interactions between sex role standards and sex differences in reading achievement in an Israeli Kibbutz. The sample included 305 children

in kindergarten, second and fifth grade. The children completed an Israeli standardized reading test and Downing's Activity-Object Opinion Survey, a measure for sex role standards. The Bender-Gestalt Test for visual coordination served as a reading readiness and maturational measure for subjects in kindergarten. The results of Gross' work showed that both sexes perceived reading as sex appropriate. In addition, analyses of reading readiness level and reading achievement indicated that there were no significant sex differences among these children. Gross noted that Kibbutz-reared children are socialized to perceive their sex roles as equal, thus the results are attributed to the cultural influence of sex role standards.

Stein (1971) studied the effects of sex role standards about different areas of achievement and sex role preferences on three determinants of motivation: attainment value, expectancy and standards of performance. Reading was among the six areas of achievement in which relationships were examined.

Subjects chosen for study were 235 sixth and ninth graders. Sex role standards were evaluated through a list of 42 items describing activities in the six achievement areas. The children indicated whether the activity was more boyish or more girlish by circling a "B" or a "G" beside the item.

Sex role preference was evaluated on a scale devised for the study. The scale consisted of 13 masculine items and 12 feminine items to which responses were indicated on 5-point scales. In the instrument designed to measure attainment value, three absolute items concerned importance, future importance and enjoyment. Relative

attainment value items present a choice between an achievement area and a non-achievement goal. Expectancy was measured by asking the subject what he thought he would really get on a test of _____. The minimum standard of performance was obtained by asking, "What is the lowest score that would satisfy you in a test of _____?" (p. 221). Results showed that the achievement area of reading was given a predominantly feminine rating. Feminine areas such as reading were more important to girls in ninth grade, but not to those in sixth grade. Analysis of individual sex role standards showed that the degree to which achievement areas are considered sex appropriate are associated with differences in motivation in those areas.

Analysis of sex role preference scores indicated more definite sex role preferences among older subjects and lower socioeconomic status subjects for girls only. Results showed that younger male subjects had more definite sex role preferences than the older male subjects. No support was indicated for the hypothesis that high preference of one role, in combination with low preference of the opposite role leads to greater motivation on tasks appropriate to the more preferred role.

The purpose of another study was to determine the influence of masculine, feminine and neutral tasks on children's achievement behavior, expectancies of success and attainment values (Stein, Pohly & Mueller, 1971). Subjects for study included 48 male and 48 female sixth graders. Each subject was given ten minutes to complete three tasks, one masculine, one feminine and one neutral. Expectancies were determined by asking subjects to estimate the scores they obtained on

each test. Achievement behavior was determined by the amount of time the subject spent on each task. Attainment value was determined by the question "How important is it to you to do well on this test of girls' (boys' or boys and girls') school subjects?" (p. 200). A measure for sex role preference similar to that described in an earlier study was also administered (Stein, 1971).

Analysis of variance showed that boys' attainment value and expectancy scores were highest on the masculine test and lowest on the feminine test and that these differences were significant. Girls' attainment values and expectancy scores were significantly lower on the masculine test, but scores did not differ on the feminine and neutral tests. Boys' achievement behavior (time on task) was significantly greater on the masculine test, intermediate on the neutral and lowest on the feminine task. In contrast, girls spent about the same amount of time on each of the three tasks.

Sex role preference was unrelated to any of the motivation scores for boys, but masculine and feminine role preferences partially predicted motivation scores for girls. High feminine preference girls considered the feminine test more important and the masculine test less important than the low feminine preference girls. High masculine preference girls worked longer on the masculine test than on the feminine test whereas girls with low masculine preferences worked nearly equal amounts of time on each test.

Dwyer (1974) examined the relationships between children's sex role standards, sex role preferences and their reading and arithmetic achievement. She defined sex role standards as "the extent to which

the individual considers certain activities appropriate to males or to females" (p. 811). Her subjects were 385 second, fourth, sixth, eighth, tenth and twelfth graders with a mean IQ of 105.8. Achievement was measured using standardized tests. Sex role standards (SRS) and individual sex role preferences (ISRP) were determined by checklists which contained 46 items representing interests and activities in many areas including ten in each of reading and arithmetic. The two checklists contained similar items. The SRS checklist asked respondents which items he or she thought boys or girls preferred. The ISRP checklist asked the subject which items he/she preferred. ISRP reflected the degree to which the individual conformed to or deviated from items most strongly associated with his sex. Associations of items with each sex were determined by group consensus on the SRS checklist. Dwyer's results indicate that SRS contributed more variance in reading scores than sex or ISRP and that the effects of sex role standards were stronger for males than females. SRS scores indicated that subjects considered reading more feminine than masculine. The individual sex role preference checklist was nearly unrelated to both reading and arithmetic scores.

In a well-designed two-part study which initially tested the reliability of a Group Toy-Preference Test, Anastasiow (1964) tested the hypothesis that 5- and 6-year-old boys who make consistent sex-typed toy preferences will show higher achievement test scores and be rated by their teachers as more successful in school. Ninty-eight kindergarten boys were selected according to results of the Group Toy-Preference Test from a group of 229. On the basis of these results

the children were categorized into masculine (masculine score at or above the third quartile on the masculine distribution; feminine score below first quartile on the feminine distribution), feminine (feminine score at or above the third quartile on the feminine distribution; masculine score below the first quartile on the masculine distribution) and median (masculine score within one-half of a standard deviation in either direction from the mean on the masculine distribution; feminine score within one-half of a standard deviation above the mean on the feminine distribution) groups.

Each of the 98 boys were individually administered the Picture Preference Test, the Franky Fable and the California Achievement Test. Teachers filled out ratings on each child. Anastasiow's findings indicate that masculine boys are significantly superior to median boys in reading but feminine boys do not read significantly less well than masculine boys even though the means are lower. Feminine boys displayed higher means in reading than the median, however, these differences were not statistically significant. Results of the teacher ratings indicate that the means for masculine boys are significantly higher than either of the other two groups.

The purpose of another study was two-fold (Tallichet, 1977). Firstly it sought to investigate the relationship between two types of underachievement and conscious and unconscious sex role identification. The second objective was to explore the possibility that this relationship may be more significant in one type of underachievement than the other and in addition, more significant for males than for females. A final sample of 88 eighth graders was chosen: 58

underachievers and 30 achievers. The Franck Drawing Completion Test measured unconscious sex role identity. Conscious sex role identity was measured by an attitude test adapted from the Gough Femininity Scale. Results of SRA Achievement Tests were used to categorize subjects into male (n=15) and female (n=15) non-learners, male (n=15) and female (n=13) non-producers and male (n=15) and female (n=15) achievers. The data demonstrated that there were no significant relationships between unconscious sex role identity and achievement, however, there were significant differences when measuring conscious sex role identity. Female underachievers demonstrated less appropriate (masculine) sex role identification than female achievers. Male underachievers demonstrate a more appropriate (more masculine) sex role identity than male achievers.

Using a sample of 83 male and 98 female sixth graders Lamkin (1967) sought to learn if intrasex differences along the masculinity-femininity continuum are related to tested achievement, assigned grades, school grades, behavior acceptability and intelligence.

The Attitude-Interest Analysis Test developed by Terman and Miles was used to measure masculinity-femininity. These scores were then ranked and mean comparisons were made of the upper and lower 27% of the masculinity-femininity continuum in each sex.

A SRA instrument called What I Like To Do: An Inventory of Children's Interests was used to measure school interests. This inventory is a checklist which provides separate scores for eight interest areas.

The grade point average was derived from teacher assigned grades of the first semester of the current school year. Information collected from the student records included results of the Lorge-Thorndike Intelligence Test and achievement test scores of the Science Research Associates Achievement Series.

The results of Lamkin's work showed that reading achievement correlated negatively with masculinity in both sexes, but attained significance only in the case of girls. Some nonsignificant trends were also reported: High masculinity correlated with low reading achievement and low masculinity correlated with high reading achievement.

Another study attempted to determine if there are any differences between a child's masculinity or femininity preferences and his total reading achievement score at the end of first grade (Strock, 1977). The subjects for study included 54 brothers and sisters of normal intelligence, in intact families enrolled in second or third grade.

Brown's It Scale For Children was used to determine the sex role preference of the children. This scale dichotomized the children into two sex role preferences: A feminine sex role preference was indicated by a score of less than 50; a score of more than 58 denoted a masculine sex role preference. The Metropolitan Achievement Test was used to ascertain the reading achievement of the subjects. The children's masculinity and femininity preference scores were matched with their reading achievement scores at the end of first grade.

The analysis of the data indicated a significant difference between children scoring masculine and children scoring feminine on the It Scale for Children. T-tests for means showed no significant differences between the reading scores of girls who scored feminine on the It Scale For Children and the reading scores of boys who had scored feminine on the same instrument. In addition no significant differences were disclosed by the t-tests done on the reading scores of masculine girls and masculine boys.

One study delt with the relationship between reading preferences and masculinity, femininity and androgeny (Anders & Dulin, 1977). Anders and Dulin administered the Bem Scale (a test for psychological androgeny) along with a questionnaire containing ten book annotations to 84 college students. The questionnaire included five male stories where the protagonist was male and five female stories where the central protagonist was female, each of which was rated on a 5-point scale.

Anders and Dulin concluded that sex role identity has little effect on preferences for masculine- or feminine-interest oriented books. Although the gender of the protagonist had no effect, the content of the annotations appeared to make a difference. Female subjects responded more positively than male subjects to stereotypic feminine content regardless of the sex of the protagonist.

Table 2.1 Summarizes the pertinent aspects of the studies reviewed in this section which focussed on sex role standards, sex role preference, achievement and achievement motivation.

Table 2.1

Studies Relating Sex Role Preference and Sex Role Standards to Reading Comprehension, Interests and Achievement Motivation

Study	Purpose	Subjects n	Subjects Gr.	Subjects Ach.	Measure of Sex Role Preference (SRP) or Sex Role Standards (SRS)	Reading Achievements	Results
Mazurkiewicz, A.J. (1960)	To investigate the relationship between the son's attitude toward reading as a masculine or feminine activity and his reading achievement. To determine the degree to which the son's attitude is influenced by his father's	157 m & f	11		M-F Attitude Activity Inventory (designed by researcher for study)	California Reading Test Advanced	1. Greater number of sons classify reading as mostly feminine 2. Boys who classify reading as feminine tend to be slightly less able than those who classify it as masculine 3. The academic student is less influenced by the attitudes of his father than the vocational student

n = Number
Gr. = Grade
Ach. = Achievement
m = Male
f = Female
Nor = Normal

Table 2.1 Continued

Study	Purpose	Subjects n	Subjects Gr.	Subjects Ach.	Measure of Sex Role Preference (SRP) or Sex Role Standards (SRS)	Reading Achievements	Results
Anastasiow, N.J. (1964)	To test the theory that boys who have adopted a sex role whether culturally appropriate or not, will be more successful in school than boys still in process of adopting sex roles	98 m	K	Nor	Group Toy Preference Test determined sample Toy and Picture Preference Test Franky Fable-projective test	California Achievement Test--Primary	1. Masculine boys read better than median boys Non-significant trends: 1. Masculine boys tend to read better than feminine boys 2. Feminine boys tend to read better than median boys
Lamkin, F.D. (1967)	To determine the direction and extent of relationship between intrasex variations and several variables related to youth in the elementary school	181 m & f	6	Nor Range	Attitude-Interest Analysis Test Masculine group: Upper 27% Feminine group: Lower 27%	SRA Achievement Series	1. There is a negative relationship between mental masculinity and reading achievement for girls only 2. Girls read better than boys Non-significant trend: There tends to be a negative relationship between mental masculinity and reading achievement for boys

Table 2.1 Continued

Study	Purpose	Subjects n	Subjects Gr.	Subjects Ach.	Measure of Sex Role Preference (SRP) or Sex Role Standards (SRS)	Reading Achievements	Results
Stein, A.H. (1971)	To determine the effects of SRS about different areas of achievement and SRP on three determinants of motivation: attainment value, expectancy of success and standards of performance	235 m & f	6 9		SRS checklist SRP Scale: 25 items 13 M, 12 F		1. No support for the hypothesis that high preference for one sex role, particularly in combination with low preference for the opposite sex role leads to greater motivation on tasks appropriate to that role 2. Children's attainment values, expectancy of success and standards of performance are related to their SRS for different areas of achievement
Dwyer, C.A. (1974)	To examine the relationships between children's SRS, SRP and their reading and arithmetic achievement	385 m & f	2 4 6 8 10 12	IQ 105.8	SRS Sex role standards checklist scored for both reading and arithmetic ISRP-SRP checklist scored for reading, arithmetic and sex-typing	Gr. 2, 4, 6 & 8: ITBS Gr. 10 & 12 Stanford Achievement Tests	Results suggest that reading and arithmetic sex differences are more a function of the child's preception of these areas as sex-appropriate or -inappropriate than that of the child's biological sex ISPR or liking or disliking a subject

Table 2.1 Continued

Study	Purpose	Subjects n	Subjects Gr.	Subjects Ach.	Measure of Sex Role Preference (SRP) or Sex Role Standards (SRS)	Reading Achievements	Results
Anders, P.L. & Dulin, K.L. (1977)	To assess college-age readers sex of protagonist preferences in story plots as these preferences were related to their Bem Scale placements	84	C		Bem Scale	Interest: Questionnaire containing 10 book annotations, 5 male 5 female -Rated on five-point scale to determine how much subject would like to read them	1. SRI has little to do with preferernce for masculine- or feminine interest oriented books 2. Female subjects preferred female content, male subjects preferred male content 3. Gender of protagonist made no difference
Strock, G.E. (1977)	To determine if there are any differences between a child's masculinity (M) or femininity (F) preferences and his total reading achievement score at the end of first grade	54 m & f 54 parents	2 3	Nor	It Scale For Children: Dichotomized children into 2 sex role preferences— Feminine: score of less than 50 Masculine: score of more than 50 Adults: Gough Femininity Scale	Metropolitan Achievement Test (administer at end of first grade)	1. Children with FSRP achieved sign. higher reading scores than those with MSRP 2. No sign. difference between reading scores of F-girls and F-boys 3. No sign. difference in score of M-girls and M-boys 4. M-F of parents has no effect on that of children

Table 2.1 Continued

Study	Purpose	Subjects n	Subjects Gr.	Subjects Ach.	Measure of Sex Role Preference (SRP) or Sex Role Standards (SRS)	Reading Achievements	Results
Tallichet, E.M. (1977)	To investigate the relationship between underachievement and sex role identification (SRI) and the possibility that this relationship may be more significant for males	88 m & f	8	58 underachiever 30 achiever	Frank Drawing Completion Test-Unconscious SRI Gough Femininity Scale - Conscious SRI	SRA Multilevel Edition of Achievement Series	1. Female underachievers demonstrate less appropriate SRI than achievers 2. Male underachievers demonstrate more appropriate SRI than achievers 3. Unconscious SRI is unrelated to achievement, but conscious SRI does influence achievement
Gross, A.D. (1978)	To determine interactions between children's SRS and reading achievement in an Israeli Kibbutz	305	K 2 5	Superior readers Disabled Readers	Measure for SRS on reading: Downing's Activity Object Opinion Survey	Israeli Standardized Reading Test	Both sexes perceived reading as sex-appropriate

The Relationship Between Interest and Comprehension

Belloni and Jongsma (1978) noted that most reading authorities regard interest as an important factor for consideration when choosing materials for reading instruction. Estes and Vaughan stated "the effect of interest on reading is obvious to anyone who has tested or taught reading comprehension" (p. 149). Research, however, indicates that the relationship between reading interest and reading comprehension is not as obvious and Estes and Vaughan declare it is, specifically, interest does not necessarily have an effect on comprehension, though it may have.

The question of how interest affects comprehension has resulted in a variety of experimental designs and results vary, explored as they are, through a diverse group of variables including self-concept, ability groups, sex-stereotyped reading content, sex-typing of reading and variously illustrated content.

Bernstein (1955) pioneered such an investigation. She designed two instruments, which were widely different in interest, based on then current research on adolescent reading interests. One was an action, suspence story with a teenage hero and the other was a long narrative description of a house. She assessed interest with a 5-point scale and tested comprehension utilizing objective and free-response questions which accompanied each story. Bernstein's sample consisted of 29 boys and 71 girls in the ninth grade who were of approximately normal intelligence, but as a group were slightly retarded in reading ability.

Bernstein found that boys and girls were more interested in the action story than the descriptive one and that boys' preferences were more marked than girls. The study supported the hypothesis that high interest is associated with greater reading comprehension. In addition, Bernstein found that intelligence does not affect the interest-comprehension relationship and that this relationship existed across ability groups.

Shnayer (1969) sought to determine the relationships between reading and comprehension among readers of differing abilities using materials two years above grade level. He divided 252 boys and 232 girls in sixth grade, whose mean IQ was 105 and mean reading ability was 6.7, into seven groups according to scores obtained on the reading and vocabulary subtests of the Gates Reading Survey. Each child was required to read 15 stories two grades higher than the mean reading ability of his or her group. Each story was accompanied by a 4-point scale to measure interest and open-ended questions to determine the degree of comprehension. Using analysis of variance to analyze the data, Shnayer found highly significant differences in reading comprehension between the seven groups ($p=.001$) and similar significant differences between comprehension of high-interest and low-interest materials ($p=.001$). In addition he found that the effect of the interest factor on comprehension diminishes as reading ability increases.

In a more recent study, Vaughan (1975) also explored the effect of interest on reading comprehension among ability groups as well as across grade levels. His sample included 524 students in grades four,

six, eight and eleven. On the basis of the SRA Achievement Tests used for grades four and six and the Sequential Test of Educational Progress used for grades eight and eleven, good, average and poor readers were defined. Several weeks prior to conducting the study an interest measure of seven passages chosen for each grade level was administered. The measure consisted of the seven titles each followed by a two sentence summary which each student was to rank in the order he or she would like to read them. Subjects read the two passages indicated to be high and low reading choices, then completed 50-deletion cloze tests to measure comprehension. Two factor analysis of variance revealed that the comprehension of less proficient readers was significantly more affected by the interest factor than the comprehension of more able readers. In addition Vaughan found that the relationship between reading and comprehension did not vary significantly across grade levels when students were given reading material at the appropriate grade level.

Belloni and Jongsma (1978) examined the relationship between interest and comprehension using reading material two to four grades above that of their sample of 50 low-achieving seventh graders. Twelve stories were selected for each of the following categories based on Norvell's research (1973) of adolescent reading interests: 1) interesting to both boys and girls, 2) interesting to girls only, 3) interesting to boys only. Each of the 12 stories were assembled in booklet form together with the title and a brief abstract on the cover. Reading interests were determined on an individual basis where each student was asked to look through the booklets, read the titles

and abstracts and select two stories: one they would most like to read and one they would least like to read. One week later at a group session subjects read the stories they had selected and completed a 50-deletion cloze test.

Analysis of variance for repeated measures indicated that students comprehended the high-interest material significantly better than they comprehended the low-interest material ($p=.001$). In addition the results showed that students transcended their frustration levels when reading materials they considered highly interesting.

The purpose of an earlier study was also to examine the relationship of interest to comprehension (Estes & Vaughan, 1973). Estes and Vaughan developed an informal inventory consisting of six passages, each in a different interest area with a readability of approximately 5.5. Prior to reading two of the passages, the subjects in a randomly chosen sample of fourth graders were asked individually to indicate which of the six topics they would like most to read about and which of the six they would like least to read about. Comprehension was measured using ten open-ended questions. The results of a t-test conducted to assess the difference between the means of the high-interest and low-interest scores reaffirmed that "interest does appear to be a very potent factor in determining reading comprehension" (p. 151).

A group of studies lead by Steven Asher has come out of the University of Illinois. Each study purports to determine interest prior to the reading of the selections so as not to confound the results, but in spite of this, the results of this group of studies are varied.

Asher and Markell (1974) evaluated the extent to which variations in motivation, with interest representing the motivational factor, affected sex differences in reading comprehension. A picture rating technique was used to assess the interests of the subjects. Children rated the interest value of each of 25 slides representing a wide range of subjects on a 1- to 7-point scale. On the basis of these ratings three high and three low areas of interest were identified for each child. Twenty-five passages from the Britannica Junior Encyclopedia were chosen to correspond to each photographic slide in the picture rating phase. A week later the children each read six cloze form passages with a readability of at least fourth grade. Three passages corresponded to the child's high-interest area and three corresponded to the child's area of low interest. Each cloze passage contained ten deletions. After completing cloze forms, the subjects were asked to indicate if they would like to read more on the topic. This procedure was designed to assess the validity of the picture rating technique.

The subjects chosen for study were 49 boys and 38 girls in fifth grade with an average IQ of 109. The results of this study indicated that boys' high-interest performance was significantly affected by the interest level of the material. In addition, this study showed that the effect of interest on performance was similar in both high and low achieving groups.

The following year Asher (1975) undertook to learn more about the processes that contribute to boys' better comprehension of high-interest materials. The initial phases of this study sought to purify

the picture rating technique used in the earlier study (1974) and to examine the relationship of interest and sex-typing among fifth-grade children. Seventy-one girls and 70 boys assessed the interest level of the 25 photographic slides on 7-point scales. In addition, another sample of 16 male and 14 female fifth graders and 14 male and 22 female college students assessed the same 25 slides on two other scales. Half of each classroom group used a 7-point scale which ranged from "feminine" at one end to "not feminine" at the other. The remaining half rated the pictures on a 7-point scale which ranged from "masculine" at one end to "not masculine" at the other.

Correlations showed that boys' interest ratings and masculine sex-typed items were strongly correlated. Moderate negative correlations existed between boys' interest ratings and feminine sex-typed items. On the contrary girls' interest ratings correlated positively with feminine sex-typed topics and negatively with masculine sex-typed topics.

The second phase of the study sought to determine whether the effect obtained by Asher and Markell (1974) could be explained in terms of differential familiarity with vocabulary or motivational influences by varying the interest level of the passages while holding the vocabulary constant. The subjects chosen for study were 44 male and 29 female fifth-grade children whose mean reading achievements were 5.90 for the boys and 6.82 for the girls. Initially the children rated 19 pictures on 7-point scales, then on another day completed a total of six passages presented in 10-deletion cloze form corresponding to three high-interest topics and three low-interest topics. The

vocabulary of these passages was controlled so as not to vary across interest levels.

The data indicated that performance on the high- and low-interest material was quite similar and that neither boys nor girls nor high or low achieving students comprehended more of the high-interest material. Asher concluded that given the same vocabulary across interest levels, children do no better on high- than on low-interest material.

In a more recent study Asher collaborated with two others to determine whether earlier results (1974) were due to contrast effects of the repeated measures design (Asher, Hymel & Wigfield, 1978). As in the previous study, this sample of 32 male and 38 female fifth graders rated the interest value of 25 photographic slides on 7-point scales. A week later the children received five passages presented in a cloze format of ten deletions each. The possibility of contrast effect was eliminated by giving half of the subjects passages corresponding to their highly rated topics and the remaining half passages which conformed to those topics they rated lowest. The authors felt that there would be no effect on interest if the effect is dependent on a contrast phenomenon, but if the interest effect is not dependent on a contrast phenomenon then the original findings would be replicated.

Analysis of the data showed that the effect of interest was significant and in contrast to the first study (Asher & Markell, 1974) both girls and boys displayed superior performance on the high-interest material. The results of this study also indicated that the effect of interest is not dependent on any contrast effects that may occur within a repeated measures design.

Asher (1978) used the materials and procedures from an earlier study (Asher & Markell, 1974) to learn whether black children comprehended more of a high than low-interest material and whether the performance gap between black and white children narrows on high-interest material. A total of 66 children were randomly chosen for study. Thirty-three black children were selected from seven fifth-grade classrooms. An equal number of white children, matched for sex were also selected from the same classrooms resulting in a sample of 19 white females, 19 black females, 14 white males and 14 black males. All of the children in each classroom were tested to avoid the potentially reactive effects of the inclusion of some and exclusion of others, even though actual data for the study was provided by the 66 children. The results showed that both black and white children achieved a higher level of performance on the high- than on the low-interest material. The effects of interest on comprehension were similar across both race and sex. Whites, however attained higher scores on both the high- and low-interest material.

Another study emerging from the University of Illinois used Asher's material to test the effects of choice upon reading comprehension (Bowermaster, 1976). Forty-two fifth graders and 50 sixth graders were separated according to sex and grade and randomly assigned to each of three conditions:

1. Cued choice: Subjects chose paragraphs from clearly labelled alternatives.

2. Blind choice: Subjects chose paragraphs, but had no information about their content.

3. No choice: Selections were assigned to subjects on a random basis.

The 25 cloze passages were organized into five sets of five stories each. Subjects in each condition received a total of five passages, one out of each set varying according to the choice condition in which they were placed.

The results showed that boys in the cued condition performed substantially better than boys in either of the other two conditions. Girls, however, had no apparent pattern that could be attributed to manipulation of the choice variable. Bowermaster concluded that the choice of topics affects boys but not girls and in addition, these results were in line with those obtained by Asher and Markell (1974).

The Inclusion of Other Variables in the Interest-Comprehension Relationship

Other studies have added different variables to the interest-comprehension relationship to emerge with added dimensions. The purpose of one study was to determine the effects that levels of interest, achievement and self-concept have on the reading comprehension of boys and girls (Saoi, 1976). Subjects for study consisted of 107 male and 113 female fourth graders, the entire fourth grade population of seven schools. The Piers-Harris Self-Concept Scale assessed self-concept and the Iowa Test of Basic Skills and SRA Assessment Survey was used to assess reading achievement. To assess interest, eleven categories were selected based on research regarding children's interests. Each category had three corresponding 25-30

word passages and titles resulting in 33 items to which the children responded on 5-point rating scales. The passages used in the interest inventory were expanded and altered to 50-deletion cloze tests with a readability of 5.0 to 5.8.

Subjects were grouped by sex into three levels of achievement, within each of three levels of self-concept resulting in a total of 18 groups. They were then assigned to either a high- or low-interest group. Each child in the high-interest group read the passage from the category he or she had indicated to be the most interesting and each child in the low-interest group read a passage from the category he or she had rated the least interesting.

Saio discovered no significant main effects of interest upon comprehension of self-concept upon comprehension, however there was a significant interaction between interest and self-concept on comprehension. High self-concept students did not perform better on high-interest materials, but the performance of children with low self-concepts was significantly superior on the high-interest material. The data also showed that low achievers are not more affected by the interest level than high achievers.

One purpose of another study was to determine the relationship between sex-typing of reading and reading comprehension achievement (Schickendanz, 1973). Subjects chosen for study were 109 boys and 104 girls in third grade.

The sex-typing instrument consisted of a total of 15 slides, five from each of three achievement areas. The children were asked to indicate whether the picture was something a) that boys would use

more than girls, b) that girls would use more than boys, c) that boys and girls would use about the same.

Interest was assessed using a paper and pencil questionnaire that consisted of 15 topics. Comprehension was tested by administering two different cloze tests with a readability of 3.0 to 3.5 to each subject. One test consisted of five passages of interest corresponding to the topic indicated as most interesting by the child on the interest questionnaire. The remaining test contained five passages corresponding to the topic the child indicated on the questionnaire as least interesting.

The results showed that for boys, more feminine sex-typing of reading scores are associated with lower reading scores. Schickendanz found no difference in the mean scores on the high-interest tests and mean scores on the low-interest tests.

Another series of studies that sought to learn more about the relationships between interest and comprehension introduced the use of sex-typed materials into their designs.

Klein (1968) designed his study to determine how the typing of stories by occupation and sex of the main character affected the interest and comprehension. A random sample of 13 classrooms included 156 boys and 156 girls from fifth grade. Two different instruments were used to determine interest: the first of these was a set of 13 semantic differential scales followed by a 6-point like-dislike statement scale. The stories consisted of three occupations: pilot, expected to appeal to boys but not girls; ballet dancer, expected to appeal to girls but not boys; social worker, expected to have equal

appeal for both sexes. Two stories were written at fifth grade level about each occupation then altered to two versions, one with a female main character and one with a male main character. Thus there were six basic stories making a total of 12 stories. Booklets were made up consisting of three male versions and three female versions. Comprehension was tested using a 50-deletion cloze test for each story.

Using the data from the dancer and pilot stories and the 6-point like-dislike scale only Klein found that boys significantly preferred the pilot content and girls significantly preferred the dancer content. Girls' ratings were higher for the female main characters in each occupational role while boys' ratings for the male main characters were higher only in the pilot content. In terms of comprehension, the sex of the main character had no effect on cloze scores, however, each sex scored significantly higher than the other on the preferred content. In contrast to a very strong preference for the pilot stories, only chance differences in the boys' comprehension scores for the sex-typed contents appeared. Girls' scores, on the other hand, were significantly higher for the preferred sex-typed dancer content than for the pilot stories. Klein concluded that the sex of the main character affects girls' interest more than occupation, but occupation is the primary factor for boys. In addition, while results show that relative to each other girls and boys comprehend more of the reading materials they prefer, the relationship between interest and comprehension is still not clear.

Robertson (1980) sought to determine the stability of the effect of sex-typed reading materials on the reading interests of grade five girls and boys over time. Her subjects included 377 children, 183

boys and 194 girls from 18 randomly selected fifth-grade classrooms. Materials inlcuded the eight dancer and pilot stories from Klein's study and retained as well the 6-point like-dislike statement scale. Thus the method and procedures were an exact replicate of Klein's study.

Robertson found that "in general the 1979 findings replicated Klein's 1967 findings and therefore support the validity, reliability and generalizability of those findings" (p. 76).

Metz (1978) used the stories and the like-dislike scale from Klein's work to investigate how the interest and comprehension of boys and girls are affected by stereotyped and non-stereotyped sex roles in reading materials. Metz randomly assigned her sample of 48 female and 48 male fifth graders to eight equal groups. In contrast to Klein and Robertson, each child read two stories about the same occupation, which differed in terms of plot and the sex of the main character. Similar to Klein's study, Metz reported that girls' expressed greater interest in the dancer roles and boys expressed greater interest in the pilot stories and that the expressed interests of boys were much stronger than those of girls. Contrary to Klein's results, she found that both sexes achieved higher comprehension on the feminine role than on the masculine role. In addition to this her study showed that the factor which influenced interest for both sexes was occupation and not the sex of the main character.

In a recent study Klein (1979) sought to determine the effect sexist content has on boys and girls using a sample of 23 male and 23 female subjects in grades five and six who were superior readers. A

total of six stories were used in this study. Three stories were about airplanes and were written at readability levels of four, six and eight. The remaining three stories contained female main characters and were also written at readability levels of four, six and eight. Each story was followed by a traditional 6-point like-dislike scale and a 24-item multiple-choice comprehension test.

Analysis of data showed that boys overwhelmingly preferred the stories about airplanes whereas girls preferred the stories with female main characters. Boys' comprehension scores on the male content were negligibly higher than girls' scores on the same content. In contrast, girls' scores on the female content were significantly higher than boys' scores on that content. Not unexpectedly, each sex scored significantly higher on the preferred content-type.

Roberts (1981) sought to determine the effect of sex-typed content at three difficulty levels on the reading interest, comprehension, difficulty ratings and correct guess scores of fifth graders. Using Klein's (1979) stories and multiple-choice questions and a 6-point like-dislike scale to determined interest, Roberts studied a group of 50 boys and 50 girls in five schools within 52 kilometers of Saskatoon. Difficulty rating was assessed with a modified version of the 6-point like-dislike scale.

In contrast to Klein (1979) Roberts found that girls rated both content types similarly for interest and that they comprehended both content-types similarily, whereas boys preferred male content to female content and comprehended more of the male content than the female content. Analysis of the difficulty ratings showed girls rated both

types of content similarly, but boys thought the male content was easier than the female content.

The purpose of another study was to determine whether comprehension was affected by sex-typed content (Frasher & Frasher, 1978). Eighty-nine female and 79 male 9- to 12-year-olds with reading achievements of at least fourth grade comprised the sample for this research. Four stories were used for this study: two with male main characters, two with female main characters, each set with one traditional role and one nontraditional role. Each child read two same-sex stories, that is, boys read the stories about boys and girls read the stories with female main characters. After the children had read the stories, they answered ten multiple-choice comprehension questions followed by three preference questions:

1) Story preference: the title of the story they liked best.

2) Character preference: the name of the character they liked best.

3) Identification: the name of the character they thought was most like themselves.

The girls indicated that they liked the nontraditional story and the nontraditional main character better and selected the nontraditional main character for identification. Results showed that boys were equally interested in the traditional and nontraditional stories and main characters and furthermore, there was no significant difference in the selection of one character over the other for identification. For both sexes, comprehension scores on the nontraditional stories were more significantly higher than those on the traditional stories.

A second study by Frasher and Frasher (1979) investigated children's preference and comprehension responses to stories in which both male and female main characters were presented in traditional and nontraditional roles; and stories in which only the opposite sex main characters were presented in those roles. The sample consisted of 218 girls and 169 boys in grades five and six with reading levels of at least fourth grade.

Similar to the earlier study, the present one used four stories, two of each sex with traditional and nontraditional roles in each set. The preference and comprehension measures were similar to those developed earlier (1978). The subjects were divided into three groups: Group one was presented with all four stories; group two was presented with two stories where characters of the same sex were represented in traditional and nontraditional roles; group three was presented with stories of the opposite sex represented in traditional and nontraditional roles. The results showed that in terms of preference, the boys who read only female stories preferred the nontraditional female and selected her for identification. Girls who read only stories about boys did not differ significantly in their preference for one character over the other. In the group that read all four stories, girls preferred stories with female main characters and the nontraditional male story and main character over the traditional male story. Boys who read four stories preferred the male main character in the traditional role over its nontraditional counterpart. In terms of comprehension in children reading two stories, no comprehension differences were obtained for either sex whether subjects read stories

with opposite sex main characters or same-sex main characters. Where children read four stories, boys comprehension scores for stories with male main characters were significantly higher than their comprehension scores on other stories. Frasher and Frasher concluded that girls' reading comprehension is neither adversely nor positively affected by the sex-typing of reading materials.

Using a population somewhat older than those in the studies discussed thus far, Dorsel (1974) investigated the effect of reported preference for printed content on the comprehension of preferred printed material. The subjects consisted of 64 volunteers, half male, half female in grades eight, nine and ten. The materials used in the study consisted of two stories: one involving "How to tune a car" and the other relating to "How to make bread". The interest measure consisted of a sheet of paper with the words "Tuning a car" and "How to make bread". Subjects were asked to circle the activity they would most like to learn about. The comprehension measure consisted of 20 multiple-choice questions. Prior to reading both stories, each subject took a 6-item pretest on the subjects corresponding to each selection to determine the amount of prior knowledge. These items were also included in the 20-item posttest.

A correlational analysis resulted in r=.27 and r=.14 for pretest versus posttest scores indicating that the students had little prior knowledge of the topics of the selections. The results of Dorsel's study showed that interest was related to reading comprehension.

The Use of Multiple-choice and Cloze to Measure Comprehension

A small number of studies have used both multiple-choice and cloze to measure reading comprehension and then compared the results. Henry (1970) endeavored to determine the effect of interest on comprehension with informative type selections. Her dissertation actually involved two studies. The first used a sample of 162 pairs of children matched by sex, grade and reading ability in grades four and six. Two selections were used one about "Jet Engines" designed to appeal to boys and one about an "Airline Hostess" designed to appeal to girls. A pilot study showed that the two selections dichotomized the sexes. Comprehension was tested using multiple-choice.

One member of each matched pair was assigned to group one which read the selection shown to be preferred by boys. The remaining member was assigned to group two to read the selection which had been preferred by girls. The second part of the investigation involved 161 unmatched subjects also in grades four and six. Each subject in this group, in addition to reading and completing cloze tests over "Jet Engines" and "Airline Hostess", also read and completed cloze tests over articles entitled "Dolls" and "Snakes". After completing cloze tests for the selections subjects indicated a preference for one of each pair of selections.

The results of this investigation showed that when tested using multiple-choice there is no significant difference in boys' comprehension scores on male and female content, but girls' scores are significantly higher on the female content than on the male content. On the female content girls' comprehension scores are significantly higher

than boys' comprehension scores. Similarly on the male content the boys' performance significantly exceeded that of girls.

In the design where subjects were unmatched and cloze was used to measure comprehension, results showed no significant differences between the mean comprehension scores of any preference groups.

In another investigation, Konschuh (1971) used 480 fifth graders and 30 multiple-choice items and 100-deletion cloze tests to study how the use of illustrations in a sex-typed story affects the interest and comprehension of boys and girls. Twelve semantic differential scales were used to assess interest on four variations of each of two sex-typed stories. The variations differed according to how they were illustrated. Konschuh found that boys' and girls' performances are not affected by the sex of the main character and that neither sex indicated a significantly greater interest in one sex-typed story over the other. Illustrations, regardless of content seem to have no significant effect on comprehension. In comparing cloze and multiple-choice scores Konschuh's investigation showed "there were no significant differences in cloze scores between or among any of the treatment variations for the total group or for either sex. However, there were significant differences in multiple-choice test scores" (p. 92). Boys had significantly greater comprehension on the inappropriately-illustrated male content and girls had significantly higher scores on the inappropriately illustrated female content. In the inappropriately-illustrated male content, boys' multiple-choice scores exceeded girls' scores, however, boys' and girls' scores on the inappropriately-illustrated female content showed only chance differences.

The purpose of Bleakley's study (1977) was to examine the effect of the sex of characters in mystery, adventure and humorous stories on the interest and comprehension of fifth-grade children. Three stories from each of the three categories listed above were written in two versions, one with a female main character and one with a male main character. Five hundred and forty fifth-grade students were grouped by sex and achievement level into six groups and randomly assigned to materials. Interest was measured by eight multiple-choice items, followed by two sentence completions. An 8-item multiple-choice test and a 50-deletion cloze test were written in two versions for each of the three stories in each category. Bleakley's results showed that girls expressed significantly more interest than boys over all versions of the stories. Girls significantly preferred stories with female main characters and boys preferred stories with male main characters. In this instance boys' preferences for male main characters were more intense than those of girls for female main characters. She found the multiple-choice comprehension tests to be more sensitive to the effects of the characteristics of individual stories on the comprehension scores of boys and girls than the cloze tests. Her investigation showed that the characteristics of individual stories had less effect on boys' comprehension scores than on the comprehension scores of girls.

The results of the three studies which include both multiple-choice and cloze comprehension tests in their designs seem to indicate the superiority of the multiple-choice test to cloze in terms of its sensitivity to the effects of individual stories on comprehension

scores (Bleakley, 1977) and sex differences in performance (Henry, 1970).

Studies Which Show No Relationship Between Interests and Comprehension

The studies reviewed so far have examined interest and comprehension through a variety of techniques with mixed results. The findings of the following studies, which focussed exclusively on the interest-comprehension relationship emerged with no significant results.

Using a sample of 90 sixth grade boys of at least average ability and fourth grade reading ability, Brooks (1972) explored the interest-comprehension relationship. Five passages were selected from Book D of Reading for Concepts and used to collect the data. Each child read five passages then completed a paired comparison interest form which contained ten pairs of titles. This was followed by a 50-deletion cloze test for each passage. Brooks' data revealed no relationship between interest and comprehension.

The purpose of another study which used 64 fourth graders and 90 sixth graders was similar (Koch, 1975). Ten general story topics were rated on a 9-point interest scale. One week later each child read the ten passages taken from standardized reading tests and then rated the stories on a 9-point scale. These were followed by multiple-choice comprehension tests and an attitude questionnaire entitled What You Think About Reading. Pearson Product Moment correlations showed no relationships between interest and comprehension. Results of the attitude questionnaire showed most subjects thought either that boys and girls liked reading equally or girls liked reading better than boys.

Similarly Sholtz (1975) used 110 fifth graders and found no significant relationship between interest and comprehension. Her subjects rated ten topics on a 7-point scale prior to reading the selections which were taken from McCall-Crabs Reading Series. Each subject read two passages, one of high-interest and one of low-interest, then answered multiple-choice comprehension tests.

Conclusions

The results of the research cited above show that the relationship between interest and comprehension is indeed a murky one. A variety of instruments, methodologies and populations have been used to explore the relationship. Similarly this interest-comprehension relationship has been investigated through a diverse group of variables: self-concept, sex-typing of reading, sex of the main character, occupation of the main character, cloze and multiple-choice comprehension tests, sex differences, informational type selections, short stories, etc. The results of these studies have ranged from highly significant, to mixed, to nonsignificant relationships between reading interests and reading comprehension.

Some of the diverse results obtained may be attributed to weaknesses in the design and instrumentation of the research. Several studies (Asher, 1975; Asher, 1978; Asher & Markell, 1974; Asher, Hymel & Wigfield, 1978; Bowermaster, 1976) used ten deletions per cloze comprehension test. Rankin (cited in Schickendanz, 1973) noted that approximately 60 deletions per passage are needed to adequately test comprehension. This may in part account for the wide variability of results evident in Asher's work alone.

Two studies which found no relationship between interest and comprehension observed the absence of marked differences in ratings between the low-interest and the high-interest material (Asher, 1975; Schickendanz, 1973). Yet other studies have employed relatively unsophisticated instruments to measure interest. In Dorsel's study (1974) subjects were asked to circle the topic of the preferred selection. Henry's subjects (1970) simply indicated a preference for one selection over another. In the Frasher and Frasher studies (1978, 1979) preference for story was indicated by simply writing down the name of the most preferred story. In none of these studies was the degree of interest taken into consideration. The strength of the interest effect may be the determining factor in accurately testing the relationship between interest and comprehension.

Details of the studies, whose purpose was to seek information concerning the interest-comprehension relationship, are summarized in Table 2.2.

The Use of Fifth Graders for Study

The literature considers children at or near fifth grade to be especially appropriate for sex-typed research. Many of the related studies consulted have used fifth-grade children as subjects for research (Asher, 1975; Asher & Markell, 1974; Bleakley, 1977; Frasher & Frasher, 1979; Klein, 1968; Klein, 1978; Metz, 1978; Sholtz, 1975). Klein (1968), in analyzing the literature, concluded that this age group "might be assumed to be beginning to be conscious of sex role and sex identity" (p. 61).

Table 2.2

Studies Dealing with How Interest Affects Comprehension

		Subjects		Interest			Comp			Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Bernstein, M.R. (1955)	To explore ways in which interest is related to reading comprehension	71 f 29 m	14.2	low		*	*			*	4.6-8.1		#1. action-packed, teen hero #2. full of wordy descriptions		*	1. Boys demonstrated more marked difference in comprehension scores 2. Intelligence did not affect the interest-comprehension relationship 3. Reading ability did not affect the interest-comprehension relationship

n = Number
Gr. = Grade
Ach. = Achievement
m = Male
f = Female

RL = Reading level
SD = Sex differences
mp = Matched pairs
ump = Unmatched pairs
Comp = Comprehension

Nor = Normal
Cl = Cloze
O = Other
St = Sex-type

I = Inventory
Sc = 4 to 9-point scales
MC = Multiple-choice
IRC = Interest related to comprehension
OQ = Open-ended questions

Table 2.2 Continued

			Subjects		Interest			Comp			Stories					Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Klein, H.A. (1968)	To determine how the typing of stories by occupation and sex of the main character affected the interest and comprehension	156 f 156 m	5			*	*	*			Gr. 5	*	Six stories: Two male forms Two female forms ballet dancer pilot social worker Total: 12 stories		*	1. Each sex scored significantly higher than the other on the preferred content type 2. For each gender all differences in cloze test scores between male and female character stories were insignificant 3. Boys preferred pilot content, girls dancer content 4. Girls' ratings were higher for female main characters; boys' ratings were higher for male main character

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./ Age	Subjects: Ach.	Interest: I	Interest: Sc	Interest: O	Interest: Cl	Comp: MC	Comp: OQ	Stories: RL	Stories: St	Stories: Description	Results: SD	Results: IRC	Results: Other
Shnayer, S.W. (1969)	To determine the relationship between interest and comprehension in materials two years above reading level among readers of differing ability	252 m 232 f	6	4.7-10.7	*					*	2 y above grade level		Each of seven ability groups read 15 stories		*	There was a gradual diminishing effect of interest on comprehension as reading ability increased

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Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Subjects Ach.	Interest I	Interest Sc	Comp O	Comp Cl	Comp MC	Comp OQ	Stories RL	Stories St	Stories Description	Results SD	Results IRC	Results Other
Henry, P.E. (1970)	To explore the effect of interest upon comprehension with informative type selections	162 mp 161 ump	4-6	ITBS 1.6-10.2			*	*	*		5.6	*	n=4 Multiple-choice Group 1: Jet Engines Group 2: Airline Hostess Cloze Group 3: Snakes Dolls, Jet Engines, Airline Hostess	*	*	Multiple-choice 1. Boys scored higher than girls on selection that was interesting to boys 2. Girls scored higher than boys on selection that was interesting to girls 3. Girls reading female content scored significantly higher than girls reading male content 4. Boys scores were not significantly affected by what they read 5. Interest does not appear to affect comprehension Cloze 6. There were no significant differences between the adjusted means of any of the preference groups

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	Comp O	Cl	MC	OQ	Stories RL	St	Description	SD	IRC	Results Other
Konschuh, A.J. (1971)	To study and analyze how the use of illustrations in a sex-typed story affects the interest and comprehension of boys and girls	240 m 240 f	5	IQ 101.88			*	*	*		Gr. 5.3	*	2 stories: 1. Robert Morgan 2. Janet Morgan Four variations of each story: 1. no illustrations 2. appropriate sex-typed illustrations 3. inappropriate sex-typed illustrations 4. neutral illustrations		*	1. The interest Comprehension Relationship is low Multiple-choice Inappropriately illustrated 2. Females had significantly higher scores for Janet Morgan than for Robert Morgan 3. Males had significantly higher scores for Robert Morgan than for Janet Morgan 4. Males had significantly higher scores than females for Robert Morgan Cloze 5. Cloze showed no significant differences in the main effects of sex, story and illustration or interaction effects of sex, story and illustration

Table 2.2 Continued

			Subjects		Interest			Comp			Stories					Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Brooks, R.A. (1972)	To determine whether a relationship exists between the passages a reader selects as more interesting and and the level of comprehension he achieves on those passages	90 m	6	Aver			*	*			Gr. 3.6-4.2		Reading for Concepts D n=6 1. One story for pretest 2. Five passages read by each child 3. Children read intact passage before doing cloze tests			Interest and comprehension are not related
Estes, T.H. & Vaughan, J.L. (1973)	To discover how interest affects reading comprehension	46	4	Gr. 4.0	*					*	Gr. 5.5		Each child was given two stories: One of greatest interest, one of least interest Pool of six stories		*	Interest is a potent factor in determining reading comprehension

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./ Age	Subjects: Ach.	Interest: I	Interest: Sc	Interest: O	Interest: Cl	Comp: MC	Comp: OQ	Stories: RL	Stories: St	Stories: Description	Stories: SD	Stories: IRC	Results: Other
Schickendanz, J.A. (1973)	Among other things, to explore the effect of sex-typing of reading and interest of test materials upon interest and comprehension	109 m 104 f	3				*	*			Gr. 3.0-3.5		Two cloze tests for each subject: 1. Five passages of interest to subject 2. Five passages of disinterest to subject (as indicated by interest questionnaire)	*		1. There was no significant difference found between means of high-interest tests and means of low-interest tests for either boys or girls 2. More feminine sex-typing of reading is associated with lower reading scores for boys 3. Girls sex-type reading as significantly more feminine than boys 4. Girls read significantly better than boys

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Table 2.2 Continued

			Subjects		Interest				Comp			Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Asher, S.R. & Markell, R.A. (1974)	To evaluate the extent to which variations in motivation affect sex differences in reading comprehension	49 m 38 f	5	IQ 109	*		*	*					Each child read three passages corresponding to high-interest area and three passages corresponding to low-interest area	*	*	1. Boys' comprehension was significantly lower than girls' comprehension 2. Boys' high-interest performance significantly superior to their low-interest performance 3. Girls' performance not significantly affected by the interest level of the material 4. Effect of interest similar in both high and low level achievement groups

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./ Age	Subjects: Ach.	Interest: I	Interest: Sc	Interest: O	Comp: Cl	Comp: MC	Comp: OQ	Comp: RL	Stories: St	Stories: Description	Results: SD	Results: IRC	Results: Other
Asher, S.R. (1975)	To determine whether the effect obtained by Asher and Markell can be explained in terms of differential familiarity with vocabulary or motivational influences by varying the interest level of the passages while holding vocabulary constant	44 m 29 f	5		*	*		*					Six passages: Three of high interest, three of low interest Vocabulary Controlled	*		1. Boys' scores were significantly lower than girls' scores 2. Interest was not a determinant of performance for either the low achievement or the high achievement groups

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./ Age	Subjects: Ach.	Interest: I	Comp: Sc	Comp: O	Comp: Cl	Comp: MC	Comp: OQ	Stories: RL	Stories: St	Stories: Description	Results: SD	Results: IRC	Results: Other
Vaughan, J.L. (1975)	To determine the effect of interest on reading comprehension among ability groups and across grade levels	524	4 6 8 11	3 lev			*	*			Gr. 4 6 11		Seven passages for each grade Each child read one passage of high interest and one passage low interest		*	1. There is a significant relationship between interest and comprehension 2. The comprehension of less able readers is more affected by interest than the comprehension of more able readers 3. The effect of interest does not appear to vary in terms of academic maturity

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	O	Cl	Comp MC	OQ	Stories RL	St	Description	SD	IRC	Results Other
Sholtz, A.J. (1975)	To investigate the relationships between reading interests and reading comprehension	110	5	5.9		*			*		Below levels of subject		Ten topics with corresponding passages (McCall-Crabs) Two per subject: one of high interest, one of low interest			Interest is not significantly related to comprehension
Dorsel, T.N. (1975)	To investigate the effect of reported preference for content on the comprehension of preferred content	32 m 32 f	8 9 10				*		*			*	Two stories: 1. Making bread 2. How to tune a car		*	1. Sex was not related to differential performance 2. Interest was related to comprehension

Table 2.2 Continued

			Subjects		Interest			Comp			Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Bowermaster, J.M. (1976)	To test the effects of choice upon reading comprehension	42 Gr. 5 50 Gr. 6	5 6		*	*		*					Choice Conditions: 1. Cued--children saw titles and abstracts, then chose 2. Uncued--blind choice, simply chose envelope 3. No choice--assigned stories		*	1. Boys in cued condition performed substantially better than boys in other choice conditions 2. Girls did not appear affected by choice varible Conclusion: Boys are more affected by choice of reading material than girls

Table 2.2 Continued

			Subjects		Interest				Comp			Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Saoi, A.L. (1976)	To assess the effects that sex, achievement, levels of interest and self-concept have on comprehension	107 m 113 f	4	High Med Low	*	*		*		Gr. 5.0 5.8			Three passages chosen for each of eleven interest categories Subjects randomly assigned to higher low interest group Each subject read and completed one cloze passage			1. There were no sex differences in comprehension scores 2. No significant main effect of interest on comprehension 3. Significant interaction between interest and self-concept on comprehension. High self-concept students did not perform better on high-interest materials, but low self-concept children did perform better on high-interest materials

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./Age	Subjects: Ach.	Interest: I	Interest: Sc	Comp: O	Comp: Cl	Comp: MC	Comp: OQ	Stories: RL	Stories: St	Stories: Description	Results: SD	Results: IRC	Results: Other
Bleakley, M.E. (1977)	To examine the effect of sex main character on the interest and comprehension of fifth grade children	540	5				*	*	*		Gr. 3.0-	*	1. Three mystery stories 2. Three adventure stories 3. Three humor stories Total of nine stories, each written with a male main character then with a female main charter	*		1. Both measures: Girls' scores were significantly higher than boys' scores 2. Boys preferred stories with male main characters 3. Girls preferred stories with female main characters 4. Differences in comprehension scores between boys and girls were greatest at the lower achievement levels 5. Multiple-choice: The characteristics of individual stories had less effect on the scores of boys than on the scores of girls

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	O	Cl	Comp MC	OQ	RL	Stories St	Description	SD	IRC	Results Other
Asher, S.R. (1978)	To learn whether black children comprehend more of high-interest than low-interest material and whether the gap in performance between black and white children narrows on high-interest material	33 black 33 f 14 white 19 black m 14 white 19 black	5	white 4.8 black 3.4	*		*	*					Each child read three passages corresponding to high-interest area and three passages corresponding to the low-interest area		*	1. Both black and white children did better on the high-interest material than the low-interest material 2. Whites attained higher scores than blacks, but boys and girls did not differ
Asher, S.R., Hymel, S. & Wigfield, A. (1978)	To determine whether earlier results (1974) were due to contrast effects of repeated measures design	32 m 38 f	5	IQ 107	*	*		*			Gr. 4& above		25 passages from Britannica Junior Encyclopedia 1. Five passages corresponding to low-interest topic 2. Five passages corresponding to high-interest topic Children randomly assigned to one of two groups		*	1. The effect of interest on comprehension was significant 2. There were no significant differences 3. Both boys and girls benefitted from the interest factor

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	Comp O	Cl	MC	OQ	Stories RL	St	Description	SD	IRC	Results Other
Belloni, L.F. & Jongsma, E.A. (1978)	To determine the effects of interest on the reading comprehension of low achieving students	50	7	low			*	*			2-4 Gr. above subjects	*	Three stories selected for each of the following categories: 1. Interesting to both sexes 2. Interesting to girls 3. Interesting to boys Subjects each read one high interest and one low interest story		*	1. Comprehension on high interest material was better 2. There was little difference in performance between the sexes

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./Age	Subjects: Ach.	Interest: I	Comp: Sc	Comp: O	Comp: Cl	Comp: MC	Comp: OQ	Comp: RL	Stories: St	Stories: Description	Stories: SD	Stories: IRC	Results: Other
Frasher, R.S. & Frasher, J.M. (1978)	To determine whether comprehension is affected by sex-typed content	89 f 79 m	9-12 yr	4.0 or above		*			*			*	Four stories: Two male and two female Each set with one traditional role and one nontraditional role Each child read two stories where the sex of the characters matched his or her own		*	1. Girls scored better on and greatly preferred the nontraditional story 2. Boys' comprehension scores were significantly higher on the nontraditional material 3. There were no significant differences in boys' preferences for the traditional or nontraditional material

Table 2.2 Continued

			Subjects		Interest			Comp			Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Metz, S.E.S. (1978)	To investigate how the comprehension and interest of fifth grade boys and girls are affected by stereotyped and non-stereotyped sex roles in reading material	51 f 50 m	5			*		*			Gr. 5	*	Each child read two stories about the same occupation, but differing in plot and sex of the main character Total of eight stories		*	1. Interest does not appear to affect the reading comprehension of boys 2. Both sexes achieved higher comprehension on the feminine role 3. Girls preferred the dancer role; boys preferred the pilot role 4. Occupation and sex role stereotypes influence interest

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	O	Cl	Comp MC	OQ	RL	Stories St	Description	SD	IRC	Results Other
Frasher, R S. & Frasher, J.M. (1979)	To investigate children's preference and comprehension responses to stories in which both male and female main characters was presented in traditional and nontraditional roles and stories in which only opposite sex main characters were presented in those	218 f 169 m	5 6	4.0 or above			*		*			*	Four Stories: Two male: traditional, nontraditional Two female: traditional, nontraditional		*	1. Boys preferred stories with male main characters and when they read all four stories, their comprehension on the male main character story was higher 2. Subjects reading two stories: No significant difference in comprehension whether subject read same sex or opposite sex story 3. Boys preferred male main character and traditional role

Table 2.2 Continued

Study	Stated Purpose	n	Subjects Gr./ Age	Ach.	Interest I	Sc	O	Comp Cl	MC	OQ	Stories RL	St	Description	SD	IRC	Results Other
Klein, H.A. (1979)	To determine the effect sexist content has on boys and girls	23 m 23 f	5 &6	Superior Readers		*		*			Gr. 4 6 8		Set 1: Three stories about airplanes at three readability levels Set 2: Three stories with female main characters at three readability levels Six stories read by eight children		*	1. Boys favored stories about airplanes; girls preferred stories about women 2. Girls scores on female content are significantly higher than boys' 3. Boys had negligibly higher comprehension scores than girls on male content

Table 2.2 Continued

Study	Stated Purpose	n	Subjects: Gr./Age	Subjects: Ach.	Interest: I	Comp: Sc	Comp: O	Comp: Cl	Comp: MC	Comp: OQ	Stories: RL	Stories: St	Stories: Description	Stories: SD	Stories: IRC	Results: Other
Robertson, M.B. (1980)	To determine the stability of the effect of sex-typed reading materials on the interests and comprehension of fifth grade students in 1967 and 1979	183 f 197 m	5	Average	*		*				Gr. 5.0-5.6	*	Pilot stories: Two male, two female Dancer stories: Two male, Two female		*	1. Boys preferred male main characters; girls preferred female main characters 2. Boys preferred pilot stories; girls were not affected by the occupational role 3. Girls' comprehension on dancer stories superior to boys' comprehension on both dancer and pilot stories 4. Boys' comprehension on pilot stories superior to girls' comprehension on pilot stories 5. Boys' comprehension was similar for both dancer and pilot stories 6. Grade five girls' comprehension is favorably affected by material expected to be liked by girls

Table 2.2 Continued

			Subjects		Interest				Comp		Stories				Results
Study	Stated Purpose	n	Gr./ Age	Ach.	I	Sc	O	Cl	MC	OQ	RL	St	Description	SD	IRC	Other
Roberts, B.G. (1981)	To examine the effects of sex-typed reading materials at different difficulty levels on the interest rating scores, comprehension scores, difficulty rating scores and correct guess scores of fifth grade boys and girls	50 m 50 f	5			*			*		Gr. 4.9-7.4	*	Stories and multiple-choice questions from Klein (1979)		*	1. Boys comprehension scores were affected by interest, but girls' scores did not appear to be affected by the interest factor 2. Boys' interest and comprehension scores were affected by content-type, but girls' scores were not 3. Boys and girls appear to read equally well 4. Difficulty was not as crucial to interest as content type was

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Because there has been concern over the elimination of sexism in education, researchers have attempted to change children's stereotyped attitudes through programmes with a nonsexist emphasis. Two such studies using fifth graders failed to change attitudes toward sex role stereotyping (Lynch, 1976; Nash, 1974). Based on the results of his research, Lynch concluded that sex roles are well established by fifth grade.

Asher and Markell (1974) observed that sex differences in reading achievement narrow between elementary school and high school. They suggested that boys at fifth grade may be transitional in their development and more likely to be influenced by interest than they would be at an earlier or later period. In reviewing the literature on sex differences in children's reading preferences, Tibbets (1974) noted that by the age of nine or ten, definite sex differences are noticeable. Ashley (1970) explored the popularity of areas of reading interest with 900 children in grades four to seven. His investigation indicates that the preponderance of reading interest peaks at fifth grade for both sexes.

CHAPTER THREE

PROCEDURES

This chapter describes the selection of subjects, the testing instruments, organization of materials, scoring of tests, data collection procedures and statistical analysis.

Selection of the Subjects

The enrollment of fifth-graders in the Eston-Elrose School Division and Westberry School of Kindersley comprised the sample of rural children in Saskatchewan which were used as subjects for the study. The populations of the Eston-Elrose and Kindersley School Divisions live in rural and small town situations. Approximately 50% of the children are bussed from farms into the schools included in the study. The populations of the towns are stable with the percentage of growth in population from 1976 to 1981 ranging from zero to 12.7% (see Table F). With farming and oil as the major industries, the areas tend to be above average in terms of socio-economic status. The communities are located in West-Central Saskatchewan, approximately 100 kilometres, on average, from any urban centre. The people are primarily of a British ethnic origin.

The subjects consisted of 156 fifth-grade children in seven classrooms. Five children were omitted due to absence or incomplete response sheets. Thus a total of 151 subjects consisting of 64 girls and 87 boys formed the sample used in this study. They ranged in age

from 10 years 5 months to 12 years 8 months. Canadian Tests of Basic Skills grade equivalent scores in reading comprehension ranged from 3.7 to 8.7.

Research Instruments

As shown in Table 3.1, five instruments were used to gather data for the study. Each subject completed two M-F Scales, one masculine, one feminine, then read four stories. After completing each story, the subjects marked a like-dislike scale, then answered 26 multiple-choice questions. The children responded to the M-F Scales and multiple-choice tests on OPSCAN answer sheets.

Table 3.1

The Instruments, Their Purpose, and Range of Possible Scores

Instrument	Purpose	Possible Raw Scores
Masculinity Scale	Measures sex role preference	0 - 25
Femininity Scale	Measures sex role preference	0 - 25
Like-Dislike Scale	Measures reaction to content	1 - 6
Male Content— 2 stories, scores combined	Measures comprehension	0 - 52
Female Content— 2 stories, scores combined	Measures comprehension	0 - 52

Sex Role Preference

Rosenberg and Sutton-Smith's Masculinity and Femininity Scales. This study used Rosenberg and Sutton-Smith's Masculinity and Femininity Scales (M-F Scales) to determine sex role preference (see Appendix A). The M-F Scales were originally developed and later extended and revalidated by Rosenberg and Sutton-Smith (1959, 1964). The literature shows these M-F Scales to be one of few designed for use with fifth grade.

The M-F Scales consist of a play inventory based on the work of Terman and Miles (1936, cited in Rosenberg & Sutton-Smith, 1959). They found children's games and play activities can be used to discriminate between the sexes (Rosenberg & Sutton-Smith, 1959).

The play inventory used in the scales has been shown to have sex discriminating power in a number of studies (Lefkowitz, 1961; Rosenberg & Sutton-Smith, 1964; Sutton-Smith & Rosenberg, 1961; Sutton-Smith, Rosenberg & Morgan, 1963; Walker, 1966).

Sutton-Smith (1965) found that response to a play scale varies according to the child's sex role preference. Thus a girl who prefers many male activities may be less feminine than another who rejects many male activities. Furthermore, Sutton- Smith notes that responses to a play inventory may predict variations in sex role adjustment without corresponding to actual play behaviors. In other words, where a child might for a number of reasons, exhibit actual play behaviors different from those indicated on a play scale, his or her responses on the play scale may still indicate variations in sex role preference.

A validation study based on 1,900 children yielded game-choice scales of masculinity and femininity for pupils in third, fourth, fifth and sixth grades (see Figure 3.1 for the first two items of each scale). The 25 items on the masculinity scale discriminated in favor of boys at the .01 level of confidence. The differences in mean scores between boys and girls were significant beyond the .001 level. Similarly the 25 items of the femininity scale significantly discriminated in favor of girls (p=.01) and in addition, the differences in mean scores between boys and girls were significant beyond the .001 level of confidence (Rosenberg & Sutton-Smith, 1964).

Scoring. The original play inventory upon which the present M-F Scales were based consisted of 180 games and activities. To score this play inventory, Sutton-Smith (1965) used all the items the subject reported having played. Sutton-Smith then subtracted items discriminating in favor of the opposite sex from those discriminating in favor of the same sex. This difference was expressed as a ratio of the total number of games played.

For the purpose of this study, the ratio system from the total battery of play scales was used. Thus the number of items chosen by the subject on the opposite sex scale was subtracted from the number of items preferred on the same sex scale. The result was expressed as a ratio of the total number of items liked.

Examples of how the M-F ratios for both male and female subjects were calculated are presented in Table 3.2. Using the ratio method gives the total number of preferred items consideration in the score.

Masculinity Scale

1.	Bandits	a) like	b) dislike
2.	Soldiers	a) like	b) dislike

Femininity Scale

1.	Dolls	a) like	b) dislike
2.	Dressing up	a) like	b) dislike

Figure 3.1. The first two items on each of the Masculinity Scale and Femininity Scale.

Table 3.2

Examples of Calculations for M-F Ratios of Male and Female Subjects

Subject	Score on Masculine Scale	Score on Feminine Scale	Total Items Liked	Ratio Formula	Calculations	Ratio
Male	20	21	41	$\frac{M-F}{total}$	$\frac{20-21}{41} = \frac{-1}{41}$	-.0244
Female	19	25	44	$\frac{F-M}{total}$	$\frac{25-19}{44} = \frac{6}{44}$	.136

Merely subtracting the score on one scale from the score on the other scale would classify the child who had chosen 21 on the masculinity scale and 25 on the femininity scale similar to the child who had chosen five on the masculinity scale and nine on the femininity scale. By using the ratio method, if these children were girls, the first child (M=21, F=25) would have an M-F ratio of .087, whereas, the M-F ratio of the second child (M=5, F=9) would be .285. Hence, because a greater proportion of the second child's total choices were feminine, her M-F ratio indicates greater femininity. Put another way, 54.4% of the first child's responses were feminine, whereas, 64.3% of the second child's responses were feminine. Merely subtracting one score from the other would not recognize these differences.

Establishing sex role preference. In his dissertation, Lamkin (1967) sought to determine the direction and extent of relationship between intrasex variables and several variables related to youth in elementary schools. The Attitude-Interest Analysis Test by Terman and Miles was administered to determine masculinity-femininity. High and low masculine groups were selected using the upper and lower 27% of the M-F distribution. Stein, Pohly and Mueller (1971) divided scores at the median on the masculine and feminine scales for boys and girls separately, to form, high and low masculine and feminine groups.

Table 3.3 demonstrates how for the purposes of this study, the M-F ratios were ranked from highest to lowest within the male and female groups and subsequently subdivided into three sex role preference groups. The upper third of M-F ratios on the male group represented those with the most masculine sex role preference, the median third, those with a mixed sex role preference; and the lower third those with the least masculine sex role preference. The upper third of girls' M-F ratios composed the group with the most feminine sex role preferences; the median third, the group with mixed sex role preferences; and the lower third the group with the least feminine sex role preferences.

Like-dislike Scale

Children's reactions to content are most often measured by 4- to 9-point adjective scales (Bernstein, 1955; Bleakley, 1977; Klein, 1978; Metz, 1978; Schnayer, 1968; Scholz, 1975). To affirm how students responded to the stories they read, this study used a

Table 3.3

Ranking and Subdividing of M-F Ratios

	Sex Role Preference
Boys	Most Masculine
	Mixed
	Least Masculine
Girls	Most Feminine
	Mixed
	Least Feminine

like-dislike scale (Coleman & Jungeblut, 1961). The 6-point scale was considered by Coleman and Jungeblut (1961) to be a useful instrument for evaluating children's interest in reading materials.

Figure 3.2 shows how scores ranging from one to six were assigned for each story according to the adjective the subject chose on the like-dislike scale to describe his or her response to the selection.

The ratings for individual stories within each of the two content-types were combined and averaged to give one rating per child for each type of content.

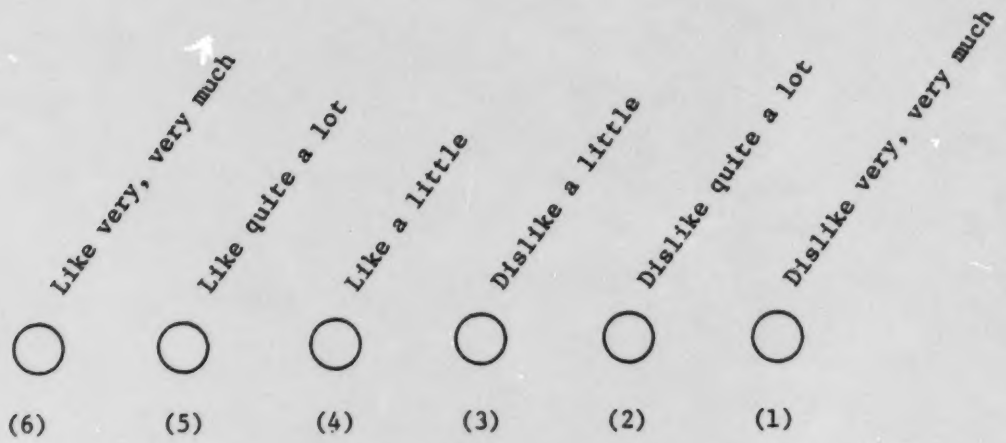

Figure 3.2. Scoring of like-dislike scale. Scores are shown in parentheses under the circle for each adjective.

Sex-typed Reading Content

The reading content used for this study consisted of four sex-typed stories reflecting census information about occupations and expressed interests of children (Klein, 1968). The male content with a male main character in the role of pilot comprized two of the stories while the remaining two stories consisted of female content with a female main character in the role of ballet dancer.

The study used two stories of each type of content to insure that the ratings reflected the child's reaction to the stereotyped content rather than any peculiarity associated with one particular selection. The scores for the two stories in each content-type were combined to give one score on the male content and one score on the female content for each child.

Each story is approximately 450 words in length. Table 3.4 shows how readability according to the Dale-Chall Formula ranges from grade 5.0 to 5.6 for the four stories (Klein, 1968).

Table 3.4

Content and Readability of Stories

Content	Title	Readability
Ballet Dancer	Ann Banks	5.6
Ballet Dancer	Linda Petit	5.4
Pilot	Don Sheldon	5.3
Pilot	Roy Travers	5.2

Comprehension Tests

Comprehension of each story was measured with a 26-item multiple-choice comprehension test (Carrier, n.d.) making a total of four Carrier comprehension tests and the class members of a senior reading course constructed a pool of multiple-choice items. These questions were adapted to fit the Bormuth Model (cited in Carrier, n.d.). For example, the text states, "In New York City, reviewers called her dancing 'unforgettable'." The semantic transformation would be: What did reviewers in New York think of Linda's dancing?

Carrier established test reliabilities through a pilot study of 58 fifth graders. Kuder-Richardson reliability coefficients for each story are presented in Table 3.5.

Table 3.5

Multiple-Choice Test Reliability Coefficients

	Ann	Linda	Don	Roy
Reliability Coefficients	.84	.82	.80	.80

Scoring. One point was given for each correct answer and comprehension scores for each story in the two content-types were combined to give a total of two scores for each child, one for each type of content. Possible raw scores ranged from zero to 52.

OPSCAN answer sheets. The subjects used OPSCAN answer sheets to record their responses to the M-F Scales and the four multiple-choice comprehension tests. Thus two sheets were used for the M-F Scales and four sheets for the comprehension tests making a total of six sheets distributed to each subject.

Organization of the Materials

Booklets

For the purposes of testing the materials were organized into two booklets. The first booklet contained the masculinity and femininity scales (see Appendix A). The cover sheet of this carried the title: "Games and Activities" and asked for the following information: name, age, sex, school. In addition, a three digit numeral ranging from 001 to 156 was placed in the upper right hand corner of the sheet. To control for order effects, the booklets given odd numerals were arranged with the masculinity scale first, followed by the femininity scale and the booklets given even numerals were arranged with the femininity scale followed by the masculinity scale.

The second booklet was entitled "Stories and Questions" and consisted of the four stories, each of which was accompanied by the like-dislike scale followed by a 26-item multiple-choice comprehension test (see Appendix A). The cover sheet carried the title "Stories and Questions" and like the booklet containing scales asked for the following information: name, age, sex, school. Furthermore, three digit numerals matching those of the first booklets were placed by hand in the upper right hand corner. Order effects were controlled by

sequencing the order of the four stories and their respective like-dislike scales and comprehension tests in random order. Table 3.6 illustrates how the order of the stories was then rotated for each successive booklet. Thus, if the order of the stories in booklet 001 was Don, Ann, Roy, Linda, then the order in booklet 002 became Linda, Don, Ann, Roy and so on. This was done for each booklet up to booklet 156.

Packets

A packet consisting of the two booklets was distributed to each child. Each booklet was identified by a colored cover (M-F Scales, yellow cover; stories, like-dislike scales and questions, green cover). The two booklets in each packet were both identified by the same handwritten numeral which was described earlier. This numeral became the last three digits of the identification number assigned to the child who completed that particular booklet. The first digit in each child's identification number referred to the school the child attended and the second digit to his or her sex.

The researcher distributed OPSCAN answer sheets separately for convenience after all other information was filled out on the cover sheets of the booklets. Using the information supplied by the children on the cover sheets, the identification numbers were later recorded onto each of the six OPSCAN answer sheets completed by every subject.

Table 3.6

Order of Testing Materials

	Booklet Numbers				
Testing Materials	001	002	003	004	005
Games and Activities Booklet: M-F Scales	Masc. Scale	Fem. Scale	Masc. Scale	Fem. Scale	Masc. Scale
	Fem. Scale	Masc. Scale	Fem. Scale	Masc. Scale	Fem. Scale
Stories and Questions Booklet:	Don	Linda	Roy	Ann	Don
	Ann	Don	Linda	Roy	Ann
	Roy	Ann	Don	Linda	Roy
Order	Linda	Roy	Ann	Don	Linda
1) Story (total of 4)					
2) Like-Dislike Scale (total of 4)					
3) Comprehension Test (total of 4)					

Distribution of Materials

The packets were distributed by the researcher in the same way in each of the seven classrooms beginning with the child in the first seat in the row on the left side of the classrooms.

Data Collection Procedures

A written script, presented in Appendix B, ensured data collection procedures were consistent and each group received similar instructions. Approximately two hours was required to collect the data in each classroom using the following procedures:

Introduction. Introduction of the researcher, project, and the role of the student.

M-F Scales. 1. The subjects were referred to as the appropriate booklet and two OPSCAN sheets were distributed.

2. Students completed the personal data on the green cover sheet of the booklet and placed their names on the OPSCAN sheets.

3. Instructions necessary to answer the items and record responses properly on the answer sheets were given.

4. When finished, the students were instructed to set the materials aside and find something quiet to do at their seats until everyone had completed the task.

Reading and comprehension. 1. The children were referred to the booklet containing the stories and the four remaining OPSCAN sheets were distributed.

2. Students completed the personal information on the yellow cover sheet and placed both their names and the name of one selection on each answer sheet.

3. The students completed the tasks for each selection in the following order:

a) Reading of the selection.

b) Completion of the like-dislike scale. This was done by marking one of the six choices directly on the sheet.

c) Completion of the multiple-choice items without looking back at the story. As soon as the items for one selection were completed, the children moved directly on to the next.

4. All materials including the two booklets and the six OPSCAN sheets, were collected as each student finished. The average total working time on the complete battery of tests was approximately 90 minutes (see Appendix C).

Statistical Analysis

The present study used a repeated measures design. Two-way and three-way analyses of variance for repeated measures were used to test the four hypotheses (see page 5). Each subject in the study was measured on both levels of the independent variable of sex-typed content.

Similar to the conventional two-way ANOVA, the two-way ANOVA for repeated measures answers three research questions. The first of these questions deals with the main effect of the factor that does not have repeated measures across its levels, that is the between-subjects factor. The second research question is concerned with the main effect of the repeated measures (within-subjects) factor. The last question determines whether or not an interaction exists between the

two factors. Because of the existence of repeated measures on one factor, in this case, content-type, the interpretation of the questions is different from the conventional ANOVA (Huck, Cormier & Bounds, 1974).

CHAPTER FOUR

RESULTS AND ANALYSIS

The purpose of the present study was two-fold. Firstly, it sought to determine the effect of sex-typed content and sex role preference on fifth-grade boys' and girls' like-dislike ratings of reading material. Secondly, the study explored the effects of high- and low-rated sex-typed content, sex and sex role preference upon the reading comprehension of fifth-grade boys and girls as measured by multiple-choice questions.

The subjects consisted of a final population of 151 fifth graders living in rural communities. Eighty-seven of these children were boys and 64 were girls. Figure 4.1 illustrates how the children were divided into six sex role preference groups on the basis of their responses to the M-F Scales. The range of M-F ratios and the number of subjects within each group are also given.

Table 4.1 illustrates the repeated measures design of the present study. Four hypotheses were tested using two-way and three-way analysis of variance. The independent variables were sex (two levels: boys, girls); sex role preference (six levels: most feminine, mixed girls, least feminine, most masculine, mixed boys and least masculine); and sex-typed content (two levels: male, female). The dependent variables were rating of content on a like-dislike scale and comprehension of sex-typed content. Each subject read four stories, rated each one on a 6-point like-dislike scale and answered a 26-item

Girls	Boys
Most feminine M-F .273 to .600 Mean = .453 n=22	Most masculine M-F .613 to 1.000 Mean = .783 n=29
Mixed M-F .111 to .243 Mean = .180 n=21	Mixed M-F .360 to .600 Mean = .500 n=29
Least feminine M-F -.310 to .103 Mean = -.040 n=21	Least masculine M-F -.333 to .357 Mean = .216 n=29

Figure 4.1. Sex role preference groups of boys and girls and range of ratios as determined by Rosenberg and Sutton-Smith's M-F Scales.

multiple-choice comprehension test for each. Thus the dependent variables of rating and comprehension on male and female content were repeated measures.

Table 4.1

Design for the Study

		Girls			Boys		
	Depend. Variables	Most Fem.	Mixed$_F$	Least Fem.	Most Masc.	Mixed$_M$	Least Masc.
Male Content	Rating						
	Comprehension						
Female Content	Rating						
	Comprehension						

M-F Scales

Table 4.2 shows that the mean M-F ratios among the three female sex role preference groups were significantly different. Similarly, the analysis in Table 4.3 indicates significant mean differences in M-F ratios among the three male sex role preference groups. The between-sex discriminating power of each item of the M-F Scales demonstrated by the present study is reported in Appendix D.

Table 4.2

Analysis of Variance: Mean M-F Ratios Among Female Sex Role Preference Groups

Source	df	ss	MS	F	p
Sex Role Preference Groups	2	4.6718	2.34	157.45	0.000*
Error	84	1.2462	0.0148		

*p<.001

Table 4.3

Analysis of Variance: Mean M-F Ratios Among Male Sex Role Preference Groups

Source	df	ss	MS	F	p
Sex Role Preference Groups	2	2.6230	1.3115	79.2177	0.000*
Error	61	1.01	0.0166		

*p<.001

Results

The remainder of this chapter will state the results of this study in relation to the hypotheses. The findings were accepted as statistically significant when the probability was less than .05.

Like-dislike Ratings on Sex-typed Content

The following two hypotheses dealt with the effect of sex-typed content upon the like-dislike ratings of boys and girls with varying sex-role preferences:

1. There will be no significant mean differences among girls with most feminine sex role preferences, mixed sex role preferences, and least feminine sex role preferences in their like-dislike rating of sex-typed content.

2. There will be no significant mean differences among boys with most masculine sex role preferences, mixed sex role preferences, and least masculine sex role preferences in their rating of sex-typed content.

The effect content had on the like-dislike ratings of children was statistically significant whereas the analysis of sex role preference was marked by chance differences. The means and standard deviations for boys' and girls' like-dislike ratings of sex-typed content are indicated by Table 4.4

Girls. Table 4.5 reveals a significant main effect of sex-typed content upon the like-dislike ratings of fifth-grade girls. The results showed that girls significantly preferred the female content over the male content.

This table also illustrates that the sex role preferences of girls have no significant effect on their like-dislike ratings of sex-typed content. Thus the null hypothesis that there will be no significant mean differences among girls with most feminine sex role preferences,

Table 4.4

Means and Standard Deviations for Like-Dislike Ratings of Sex-typed Content

		Like-Dislike Ratings			
		Male Content		Female Content	
Sex	Sex Role Preference	Mean	S.D.	Mean	S.D.
Girls	Most Feminine	4.55	.99	4.79	.66
	Mixed	4.38	1.66	5.19	.72
	Least Feminine	4.1	1.02	4.98	.76
Boys	Least Masculine	5.33	.86	3.91	1.05
	Mixed	5.40	.51	3.67	.99
	Most Masculine	5.22	.99	3.50	1.23

Table 4.5

Girls Like-dislike Ratings: Analysis of Variance with a Repeated Measure on Content

Source	df	MS	F	p
Sex Role Preference	2	.46	.40	.673
$Error_b$	61	1.16		
Content	1	12.07	25.01	.000*
Sex Role Preference X Content	2	1.12	2.33	.106
$Error_w$	61	.48		

*$p<.001$

mixed sex role preferences and least feminine sex role preferences in their rating of sex-typed content was accepted. No significant interactions among the independent variables of girls' sex role preferences and sex-typed content were revealed by the analysis.

Boys. The analysis shown in Table 4.6 demonstrates a similar significant main effect of sex-typed content upon the like-dislike rating of boys ($F=186.15$ $p<.001$) indicating that boys significantly preferred male content over female content.

Table 4.6

Boys' Like-dislike Ratings: Analysis of Variance With a Repeated Measure on Content

Source	df	MS	F	p
Sex Role Preference	2	1.01	.81	.449
$Error_b$	84	1.25		
Content	1	114.26	186.15	.000*
Sex Role Preference X Content	2	.47	.76	.472
$Error_w$	84	.61		

**p<.001

The same table also presents evidence that boys' like-dislike ratings of sex-typed ratings of sex-typed content are not significantly affected by their sex role preferences. Therefore the second null hypothesis is that there will be no significant differences among boys with most masculine, mixed and least masculine sex role preferences in their rating of sex-type content was accepted. The analysis disclosed no significant interactions of sex role preference and sex-typed content on boys' like-dislike ratings.

Comprehension on Sex-typed Content

The remaining hypotheses stated below, were concerned with the effect of boys' girls' reactions to sex-typed content on their comprehension.

3. There will be no significant mean difference in comprehension on low-rated content and comprehension on high-rated content for both boys and girls.

4. There will be no significant mean difference in comprehension scores on male and female content among the 1) least feminine girls and most masculine boys, 2) mixed girls and mixed boys, and 3) the most feminine girls and least masculine boys.

Comprehension on high- and low-rated content. Means and standard deviations for boys' and girls' comprehension on high and low like-dislike rated content are indicated in Table 4.7.

Table 4.7

Means and Standard Deviations for Comprehension on High- and Low-rated Content

	Girls		Boys	
	Mean	S.D.	Mean	S.D.
High-rated Content	18.43	4.934	18.40	3.743
Low-rated Content	17.69	3.854	18.13	4.111

Table 4.8 demonstrates that there was no significant main effect of high- and low-rated content upon comprehension scores. Therefore, the null hypothesis that there will be no significant mean difference in comprehension on low-rated content and comprehension on high-rated content for both boys and girls was accepted.

The effect of sex role preference on comprehension. The means and standard deviations of the comprehension scores of the six sex role preference groups are presented in Table 4.9.

The three-way analysis of variance presented in Table 4.10 reveals that there are no significant main effects of sex role preference upon the comprehension of children reading sex-typed content hence the last null hypothesis that there will be no significant mean difference in comprehension scores on male and female content among 1) least feminine girls, most masculine boys, 2) mixed girls, mixed boys and 3) most feminine girls, least masculine boys was accepted.

The effect of sex-typed content on comprehension. The statistical analysis presented in Table 4.10 disclosed no significant main effect of sex-typed content upon comprehension scores.

Table 4.8

Comprehension of High- and Low-rated Content: Analysis of Variance With a Repeated Measure on Sex-typed Content

Source	df	MS	F	p
Sex	1	3.30	.11	.739
$Error_b$	149	29.49		
Content	1	19.11	3.88	.051
Content X Sex	1	4.01	.81	.368
$Error_w$	149	4.92		

Table 4.9

Means and Standard Deviations for Comprehension Scores of Six Sex Role Preference Groups

	Male Content		Female Content		Contents Combined
	Means	S.D.	Means	S.D.	Means
Most Masculine	18.26	3.427	18.69	3.867	18.48
Mixed	18.70	3.830	18.31	4.611	18.51
Least Masculine	18.26	4.059	17.40	3.846	17.88
Most Feminine	17.86	3.215	18.86	4.928	18.36
Mixed	16.23	5.253	16.88	5.406	16.56
Least Feminine	18.95	2.103	19.52	4.238	19.24

Table 4.10

Comprehension on Sex-typed Content: Three-way Analysis of Variance With a Repeated Measure on Content

Source	df	MS	F	p
Sex	1	3.45	.12	.731
Sex Role Preference	2	42.90	1.47	.232
Sex X Sex Role Preference	2	55.35	1.90	.153
$Error_b$	145	29.11		
Content	1	3.94	.79	.375
Content X Sex	1	18.95	3.82	.053
Content X Sex Role Preference	2	1.36	.27	.761
Content X Sex X Sex Role Preference	2	4.58	.92	.400
$Error_w$	145	4.97		

Sex differences in comprehension. The three-way ANOVA of Table 4.10 reveals no significant main effect of sex upon the comprehension of the subjects, thus indicating that the boys and girls read the materials with equal competency.

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

This study's two-fold purpose was firstly, to determine the effect of sex-typed content and sex role preference upon fifth-grade boys' and girls' like-dislike ratings of reading material, and secondly, to explore the effects of high- and low-rated sex-typed content, sex, sex role preferences upon the reading comprehension of fifth-grade boys and girls as measured by multiple-choice questions. The sex-typed content consisted of two stories about male pilots and two stories about female dancers. Comprehension was assessed by 26 multiple-choice questions completed after reading each story. The like-dislike rating of each story was done on 6-point like-dislike scales. The sex role preferences of the boys and girls were determined by their responses on Rosenberg and Sutton-Smith's M-F Scales.

The subjects consisted of 87 boys and 64 girls in fifth grade from the Eston-Elrose School Division and Westberry School of Kindersley, in the Kindersley School Division, both of which are in West Central Saskatchewan.

Each subject read all four stories and responded to the like-dislike scales and accompanying comprehension tests for each story, thus giving this study a repeated measures design.

The Major Findings of the Study

Like-dislike Ratings

The children's like-dislike ratings of sex-typed content were assessed with a 6-point like-dislike scale. The results of the analysis of variance performed on the scores from those scales revealed the following findings:

1. The sex role preferences of girls do not significantly affect their ratings of sex-typed content.

2. Girls significantly rate the female content on the like-dislike scale.

3. The sex role preferences of boys do not significantly affect their ratings of sex-typed content.

4. Boys significantly rate the male content over the female content on the like-dislike scale.

Reading Comprehension

The subject's reading comprehension of sex-typed content was evaluated using 26-item multiple-choice tests. The findings below were disclosed by the analysis of comprehension scores:

1. Fifth-grade boys and girls read sex-typed content equally well.

2. Liking or disliking the content has no significant effect on the reading comprehension of fifth-grade boys and girls.

3. The sex role preferences of boys and girls have no significant effect upon their reading comprehension.

4. Sex-typed content has no significant effect upon the reading comprehension of fifth graders.

The Findings In Relation to the Questions the Study Sought to Answer

The data collected from the subjects of this study were analyzed to answer five questions proposed in Chapter One of this thesis.

The first two of these questions were concerned with the dependent variable like-dislike rating: How do fifth-grade boys and girls react to sex-typed content in terms of liking or disliking it? The results indicate that these boys and girls strongly prefer to read sex-appropriate material.

The second of these questions was how do the sex role preferences of boys and girls affect their likes and dislikes in sex-typed content? The findings point out that fifth-grade children's sex role preferences have little or no effect upon the like-dislike ratings they give to sex-typed content.

The last three questions involved the dependent variable, comprehension. The first of these questions asked how liking or disliking story content affects the reading comprehension of fifth-grade boys and girls. The results of this study show that liking or disliking reading material has no significant effect on the degree to which the children understand the material when they read it.

The next question sought to explore the effect of the sex of children upon their reading comprehension. The study showed that sex had no significant effect on comprehension, hence, according to these results, the boys and girls read with equal competency.

The last question this research directed itself to was: What are the effects of boys' and girls' sex role preferences on their comprehension of sex-typed content? The findings of this study demonstrate that children's sex role preferences do not significantly affect their comprehension when reading sex-stereotyped materials.

Conclusions

1. Fifth-grade children who might be identified as having different sex role preferences show similar like-dislike reactions and comprehension levels when reading sex-typed content.

2. Fifth-grade children tend to like to read sex-appropriate content better than material considered more appropriate for the opposite sex.

3. Fifth-grade boys and girls read equally well regardless of content type.

4. The comprehension of boys and girls reading sex-typed content is affected minimally by the degree to which the content is liked or disliked.

Discussion of Findings and Implications

The subjects used in this study consisted of fifth-grade students from two rural school divisions in West-central Saskatchewan. To the extent that these divisions are typical of rural areas, the results of this investigation may be generalized.

Like-dislike Ratings of Sex-typed Content

The findings of this study with regard to the like-dislike ratings are in agreement with several others that have sought to determine the effect of sex-typed material on the interest of boys and girls (Bleakley, 1977; Klein, 1968; Klein, 1979; Metz, 1978; Robertson, 1980). Based on this study and the results of other studies one may conclude that boys prefer to read male content and girls prefer to read female content.

Comprehension of Sex-typed Content

The present study showed that the comprehension scores of boys and girls are not affected by reading sex-typed content. These results are in contrast to other studies (Klein, 1968; Metz, 1978; Robertson, 1980) which found that sex-typed content had varying influences on comprehension.

Frasher and Frasher (1979) showed that boys' comprehension scores on stories with male main characters were significantly higher than their scores on other stories. In addition they concluded that girls' comprehension is neither adversely or positively affected by the sex-typing of reading materials.

Klein's (1968) results indicated that girls' scores were significantly higher on the female content, but that boys comprehension scores were not affected by the sex-typed content. Robertson (1980) replicated Klein's study and confirmed his 1968 findings. Metz (1978) found that both sexes achieved higher comprehension on the feminine role stories than on the masculine role stories. In another study

Klein (1979) discovered that girls' comprehension scores were higher on female-type content and boys' comprehension scores were higher on male-type content.

The diverse results obtained by the studies discussed above indicate that the effect of sex-typed materials upon reading comprehension is inconsistent. One may conclude from this diversity of findings that children's interests and reactions to sex-typed content within classrooms may be just as varied. Most teachers know only too well that it is impossible to meet the content needs of all children on every occasion and neutral content does not appear to be the answer. Klein (1968) in referring to Norvell's suggestion, observed that "neutral materials by their nature are compromises and thus lack the intrinsic appeal each sex may find in sex-appropriate material" (p. 116). Thus, it seems logical that the best way at present to attempt to meet these needs is to provide a balance of content portraying male and female characters in both traditional and non-traditional roles.

The Effect of Like-dislike Ratings on Comprehension

The present study revealed no significant mean differences between boys' and girls' comprehension scores on the high-rated content and their scores on the low-rated materials. This finding supports the results of several studies reviewed in this report that have sought to find out more about the relationship between interest and comprehension (Asher, 1975; Brooks, 1972; Koch, 1975; Schickendanz, 1973; Sholtz, 1975). Conversely, the review of the literature in Chapter Two demonstrates that there is an equally large body of literature

that has disclosed significant, but varying relationships between interest and comprehension.

The results of the present study, together with those reviewed in Chapter Two, imply that the relationship between like-dislike responses to content and comprehension or the effect of these responses upon comprehension is unclear. The diversity of results indicated by the literature is due in part to widely differing designs, materials, methodologies and subjects. However, it also seems likely that there are variables affecting this relationship which research has yet to measure precisely or perhaps even determine. This suggests then, that more studies designed to investigate like-dislike responses to content and comprehension are warranted before much of what has been found can be practically and meaningfully applied in the classroom situation.

The Effect of Sex Role Preference on Like-dislike Ratings and Comprehension

The findings of this study indicate that the sex role preferences of children have no significant effect on either their like-dislike ratings of sex-typed content or their comprehension of sex-typed content.

Like-dislike ratings. According to the results of the present study, the sex role preferences of children bear little relationship to their ratings of sex-typed content, thus supporting the findings of Anders and Dulin (1977) who concluded that sex role identity has

little effect on preferences for masculine or feminine interest oriented books.

Klein (1968) found that 4% of boys' ratings favored the female content over the male content and 28% of girls' ratings favored the male content over the female content. This suggests the existence of other variables operating to influence preference for male or female oriented reading materials. One possible variable which might be affecting these preferences are the sex role stereotyped attitudes of children. In other words, how do children's sex role stereotyped attitudes influence their preferences for sex-typed content? Do those children with the strongest, most traditional biases show greater preference for sex-appropriate reading content? Conversely, do children exhibiting less sex role bias also demonstrate a wider range of preferences in sex-typed content?

Comprehension. This study found that comprehension scores are not affected by children's sex role preferences lending support to Dwyer's (1974) finding that individual sex role preference is nearly unrelated to reading scores.

These findings are in contrast to those of Strock (1977) who found that children with feminine sex role preferences read better than those with masculine sex role preferences. The present findings also differ from those of Lamkin (1967) whose results showed that high masculinity correlated with low reading achievement and low masculinity correlated with high reading achievement.

In her review of the literature Dwyer (1974) argued that liking or disliking a subject or biological sex were inadequate explanations for sex differences in achievement. Dwyer suggested, instead, that within-sex differences may account for these observed disparities in ability.

Within-sex differences may or may not influence interest and comprehension. It can be concluded from this study that sex role preferences have little or no influence on either like-dislike ratings or comprehension. On the other hand, some studies show that sex role preference can have an influence on reading scores (Lamkin, 1967; Strock, 1978). The need for further study is evident. There may not be a need to search for new variables to account for differences in achievement, but possibly to develop more sophisticated and reliable methods of measuring variables that have already been proposed i.e. sex role preferences. The instruments currently available for the measurement of sex role preference are relatively primitive, lacking the more extensive reliability and validity studies which support some other types of psychological tests. In other words, it may be necessary to undertake research to develop more precise methods of measurement before any consistency in the results of these types of studies is achieved.

Recommendations

1. Whereas the results of this study indicate no significant findings in terms of the effect of like-dislike ratings upon comprehension, closer examination of the analysis presented in Chapter Four,

an interesting trend is revealed in Table 4.8 which shows that both girls' and boys' comprehension scores are higher on material given the higher rating. Another trend that could be investigated is the interaction of content and sex on comprehension suggesting that boys and girls do not have a similar pattern of comprehension.

The Canadian Tests of Basic Skills grade scores indicate that the average reading ability of the fifth-grade subjects were a half a year above their grade placement. Klein (1968) found that higher achieving boys and girls were not affected by sex-typed content, but lower achieving children were. In addition, he found that liking or disliking content affected performance of the poorer readers than better readers. A replication of this study comparing subjects of different reading ability and their sex role preference may be worthwhile.

2. This study showed that the sex role preferences of boys and girls had little or no significant effect on either their like-dislike ratings of sex-typed content or their reading comprehension of that content. These findings concur with those of another study which sought to determine the effect of individual sex role preference and sex role standards on reading achievement. The results showed that sex role preference was not related to reading achievement, but suggested instead that sex role standards* may be the key to within-sex differences in achievement (Dwyer, 1974). Hence it is recommended that a study similar in design to the present one be undertaken to determine the effects of sex role standards upon the like-dislike ratings and reading comprehension of children reading sex-typed content.

3. In the present study comprehension was measured using a multiple-choice format. Several of the studies using sex-typed content measured comprehension with cloze tests and obtained significant results (Klein, 1968; Metz, 1978; Robertson, 1980). Would the results of this research be affected by the use of a cloze test format to test comprehension? It is recommended that a study similar to this one be undertaken, substituting cloze tests for multiple-choice tests.

4. Earlier, the importance of creating more precise methods of measuring variables such as sex role preference was discussed. Therefore research directed to developing more reliable and valid tests of sex role preference than those currently in the literature is recommended.

5. The possibility of children's sex role stereotyped attitudes influencing preferences for sex-typed content was discussed earlier. A study to determine the degree of influence this variable exerts on children's content preferences would be worthwhile.

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* Dwyer defines sex role standards as the extent to which individuals regard certain activities as appropriate for males or females.

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Appendix A

STORIES AND QUESTIONS

NAME _____

AGE _____

SEX _____

SCHOOL _____

Don Sheldon is Alaska's most famous bush pilot. In the roadless wilderness that is the center of Alaska, Don's plane is a taxi, the railroad, and often an ambulance. Trappers, miners, and homesteaders depend on Don for supplies and to get in and out of the country.

"There isn't a better pilot in the world," say all of Don's friends. He can take-off from a cow pasture with a full load of eggs or dynamite. An hour later he will airdrop a case of eggs or the dynamite within fifty feet of a marked spot. Not an egg is ever broken and needless to say nobody has been blown-up. "I'll bet," a pilot said, "Don could land his plane on the back of a whale floating on the surface."

Don works a long day. It begins very early. On the first trip he usually takes a passenger or two ninety bumpy miles down river to Anchorage. There he finds a load of cargo which he puts on the plane.

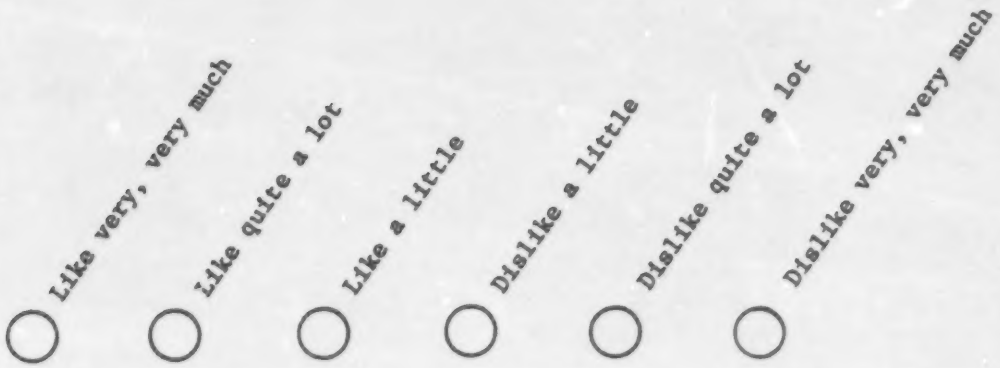
He flies back north with the cargo for a construction camp seventy-five miles from the city. He lands the plane and it is unloaded. Quickly he takes-off to deliver gasoline and pick up a sick man to bring to Anchorage's hospital. He buys a supply of chewing tobacco for a miner which he drops on the way back home.

To know Don, you must fly with him. I went on a flight one day to pick up some mountain climbers atop Mount McKinley, North America's highest peak. McKinley is nearly four miles high. People come from all over the world to climb it and Don flies most of them to and from the slopes.

For this flight, Don uses a small airplane with skiis to land in the snow. We take-off and a minute later Don throws the plane into a stomach upsetting sharp bank. Suddenly, Don points to a silver glitter and explains, "Plane fell apart in mid-air and crashed there a few years back killing everyone. This little plane will stand up to anything nature offers, but there are problems. I may fall asleep. The engine may fail and you've no place to land. You aim between the two tallest trees around and let the plane try to keep together by itself. First the wings tear off, then the landing gear, and before anything happens to the fuselage, you stop--you hope. Then you begin to pray you're found before you freeze to death.

Suddenly the plane was in a whiteout. It was like flying in a bottle of milk. Quickly the air cleared and Don looked troubled. The mountain could be in a bad mood.

Put a cross (X) in the circle which tells best how you feel about the selection you have just read.



Story 131

1. The people in central Alaska use airplanes because:
   a. airplanes are faster than taxis.
   b. there aren't any roads in central Alaska.
   c. Don Sheldon is an excellent pilot.
   d. the people like flying in airplanes.

2. The people liked Don Sheldon because:
   a. he had a pleasant personality.
   b. he wasn't scared to take chances.
   c. he liked the north as much as they did.
   d. they could depend on him.

3. Who gets their supplies from Don?
   a. the hospitals
   b. the airport
   c. trappers and miners
   d. the railroad company

4. What is a bush pilot?
   a. a person who comes from a camp or small town
   b. a pilot who specializes in stunt flying
   c. a pilot who flies into small and hard to reach places
   d. a person just learning to fly

5. Don is a good pilot because:
   a. he can land on the back of a whale.
   b. he drops his cargo on time.
   c. he drops his cargo without damaging it.
   d. he can fly in any kind of weather.

6. Why is it important that Don could drop supplies on a target?
   a. Some of the camps are very small.
   b. It saved fuel if he didn't have to keep trying to hit the target.
   c. The supplies might be lost if they were scattered.
   d. The supplies are less likely to be damaged.

7. A person said Don could land his plane on the back of a whale. The person meant:
   a. Don had permission to land his plane on a whale.
   b. he didn't care where Don landed his plane.
   c. Don was able to land his plane in small places.
   d. it is safe to fly over the ocean with Don.

8. On the first trip Don usually takes a passenger or two ninety bumpy miles:
   a. to McKinley.
   b. down river to Anchorage.
   c. to a construction camp.
   d. to Alaska.

9. In the story, Don delivered:
   a. gasoline and chewing tobacco.
   b. doctors and railroad workers.
   c. fishermen and hunters.
   d. eggs and dynamite .

10. The best way to get to know Don is to:
    a. be a miner in Alaska.
    b. read the stories he writes.
    c. meet him at the airport.
    d. fly with him.

11. What cargo was to be picked up on Mt. McKinley?
    a. dynamite
    b. a sick man
    c. mountain climbers
    d. parts from an airplane which crashed.

12. How high is Mt. McKinley?
    a. fourteen miles high
    b. four miles high
    c. forty miles high
    d. one mile high

13. What is special about Mt. McKinley?
    a. It is North America's highest peak.
    b. It is difficult to get to.
    c. There is a wrecked plane on the mountain.
    d. Don knows a secret passage to the top.

14. What kind of plane does Don use to fly people to the mountain?
    a. a helicopter
    b. a large, sturdy plane with skis.
    c. a small plane with skis.
    d. a small plane that can fit between trees

15. What does the sentence mean: "Don throws the plane into a stomach upsetting sharp bank?"
    a. He turned the plane sharply.
    b. The plane hit hard on the mountain snow.
    c. Don had lost control of the plane.
    d. The plane's controls were jammed.

16. What was the silver glitter Don pointed to?
    a. one of the silver mines in Alaska
    b. equipment from the mountain climbers
    c. a wing from his own plane
    d. a plane that had wrecked years ago

17. What did Don mean when he said his plane would stand up to anything nature offered?
    a. His plane was well built.
    b. The wings on the plane would tear off if there was trouble.
    c. The plane would be okay if it crashed.
    d. The plane is equipped with skis.

18. What problem mentioned in the story could cause a crash?
    a. The instruments might not be accurate.
    b. The landing gear might be frozen.
    c. Don might fall asleep.
    d. The mountain winds might be too strong for the plane.

19. If the engine failed, what would be Don's first problem to solve?
    a. turning off the fuel before it leaked onto the hot engine
    b. staying warm
    c. finding a place to land
    d. getting the engine started again

20. Don would aim the plane between two tallest trees in order to:
    a. be easily seen be rescuers.
    b. slow the plane down while landing.
    c. not damage the landing gear.
    d. save the engine of the plane from damage.

21. After the plane hits the trees, the first thing to happen is:
    a. the landing gear falls off.
    b. the propeller falls off.
    c. the wings tear off.
    d. the fuselage breaks apart.

22. The word "fuselage" means:
    a. the bundle of supplies carried in the plane.
    b. the main body of the plane.
    c. the gas tanks in the wings of the plane.
    d. the emergency equipment in the plane.

23. What is a danger after the plane is on the ground and stopped?
    a. a fire would start from the gasoline
    b. wild animals might come to the plane
    c. you might freeze to death before being found
    d. the emergency equipment might be broken

24. "Flying in a bottle of milk" means:
    a. flying in the Milky Way.
    b. not being able to see in front of you.
    c. you have no control of the plane.
    d. the mountains are too close to see where you are going.

25. Why did Don look troubled?
    a. The plane seemed to be losing fuel.
    b. He couldn't find the mountain climbers.
    c. The plane had lost its landing gear.
    d. The mountain could be in a bad mood.

26. Don Sheldon is the type of pilot who:
    a. liked to talk a lot while flying.
    b. didn't worry about emergencies.
    c. planned for emergencies.
    d. worried a lot about the dangers of flying.

122 - ANN BANKS, BALLET DANCER

Ann Banks' father was a famous playwright. Ann had no other plans for her life than to act in her father's plays. However, she changed her mind when she saw her first ballet. "I want to take ballet lessons," she told her mother. Her mother refused to arrange lessons. She explained that rigid ballet training made machines of people.

Ann decided, "If I cannot take ballet, I will read everything I can find about ballet." She collected pictures of famous dancers. She danced to records, making up steps of her own. When she read that a certain dancer advised running over hills barefoot, she tried it, but ended up with cut feet from broken glass.

Ann's lessons came in an unexpected way. Her sister Sally was suffering from fallen arches. To strengthen her feet, the doctor advised Mrs. Banks "Sally should take ballet." Mr. Banks argued with his wife that if Sally took ballet, they might as well let Ann take lessons too.

Both Ann and Sally were taken to Popov's Dance School. Popov looked at Ann and said, "You are too heavy. You have weak knees and stand very poorly. You are a little old to start ballet." Nevertheless, Popov accepted Ann in his school.

Books did not prepare Ann for the hard work ahead. She was completely surprised by aches and pains and how tired she would always feel. The mirror showed her that her legs were too short. "You'll never be a dancer," insisted Popov.

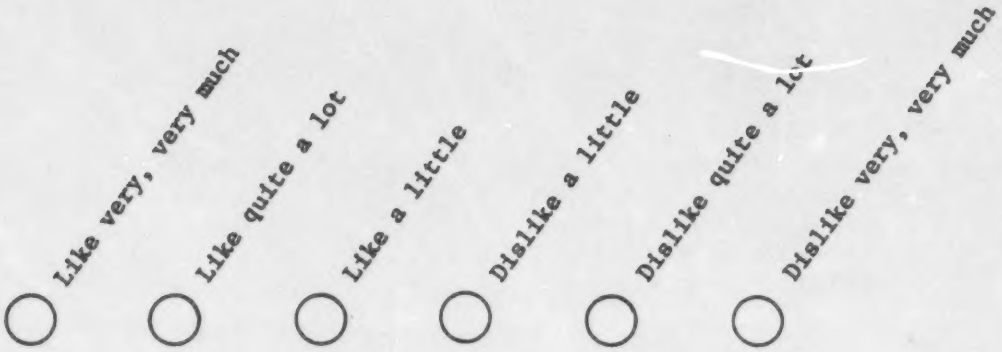
Ann attended ballets often. She studied what she wanted to do in her own dancing. "I will be a dancer," Ann promised herself. To prove Popov wrong, she practiced harder and longer which worried her parents and they sent her to England.

She decided to stay in London where she created a ballet for herself called "Rodeo". "Rodeo" is a love story set in the American Southwest. It centers around a cowgirl. With the odds against her she fights for her love and the ranch her father left her. She seems to be failing, but in the end wins both. In the ballet there is a great deal of riding, roping and square dancing.

When the ballet opened in New York City, everything seemed to go wrong. Steps were missed. Some of the girls clapped offbeat. As the curtains closed, Ann began sneezing from the dust. "How many mistakes can happen in one evening?" she wondered.

The audience didn't seem to notice what went wrong. They enjoyed the ballet and their applause resulted in twenty-two curtain calls. However, not all the newspaper writers were as pleased and Ann still had to prove them she was a dancer.

Put a cross (X) in the circle which tells best how you feel about the selection you have just read.



1. Ann's father was a famous:
   a. tapdancer.
   b. playwright.
   c. actor.
   d. ballet dancer.

2. Ann wanted to be an actress until:
   a. she read a book about ballet.
   b. she was told she could dance well.
   c. she saw her first rodeo.
   d. she saw her first ballet.

3. Ann's mother refused to arrange ballet lessons because:
   a. Ann had bad feet.
   b. she wanted Ann to be an actress.
   c. rigid ballet training made machines of people.
   d. the family was moving to London.

4. When Ann's mother wouldn't let her take dancing lessons, Ann:
   a. tried to get into Popov's Dance School.
   b. began writing a ballet.
   c. began reading all her father's books on ballet.
   d. began reading all she could about dancing.

5. Ann developed her interest in dancing by:
   a. writing plays.
   b. dancing to records and making up steps.
   c. going to England.
   d. having her brother read stories to her about famous ballet dancers.

6. Ann ran barefoot over the hills because:
   a. it was part of a ballet she wrote.
   b. her brother could do it.
   c. to prove to her mother she wanted to dance.
   d. she had read certain dancers advised it.

7. What happened which helped Ann get ballet lessons?
   a. Ann's mother decided to teach her.
   b. Ann's sister needed ballet lessons to strengthen her feet.
   c. Ann was seen as having a natural talent for dancing.
   d. The doctor said Ann should start ballet lessons.

8. Ann's father believed:
   a. dancing would turn Ann into a machine.
   b. lessons would be too expensive.
   c. Ann was too heavy for ballet.
   d. Ann could take lessons with her sister.

9. Popov thought Ann:
   a. would never be a dancer.
   b. had weak arches.
   c. could learn to dance if she worked hard.
   d. should continue to practice writing ballets.

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10. According to Popov, ballet dancers:
    a. are people who act like machines.
    b. are younger than Ann when they start.
    c. stand very poorly.
    d. should also write ballets.

11. Books didn't prepare Ann for:
    a. the hard work of dancing.
    b. Popov's method of teaching writing.
    c. fixing her fallen arches.
    d. getting into ballet school.

12. When Ann started taking lessons, she was surprised:
    a. by the amount of reading she had to do.
    b. at the long hours of practice.
    c. when her legs grew longer.
    d. by all the aches and pains she felt.

13. When Ann looked in the mirror:
    a. her legs looked too short.
    b. she could stand very straight.
    c. her feet were not getting better.
    d. she said, "You'll never be a dancer."

14. Why did Ann attend ballets often?
    a. She thought she would learn to write better ballets.
    b. She studied what she wanted to do in her own dancing.
    c. Her parents gave her tickets.
    d. She wanted to watch Popov dance.

15. In spite of what Popov said, Ann promised herself she would:
    a. practice until her legs grew stronger.
    b. move to London and become famous.
    c. write a successful ballet.
    d. become a dancer.

16. To prove Popov was wrong, Ann
    a. ran barefoot over hills.
    b. read many books.
    c. wrote a successful ballet.
    d. practiced harder and longer.

17. Ann went to England because:
    a. her parents thought she needed a rest.
    b. she needed to study ballet under better teachers.
    c. she wanted to write a special ballet.
    d. she had to see a special doctor for her feet.

18. What was the name of the ballet Ann created?
    a. America
    b. Cowboys
    c. Rodeo
    d. Roping

19. Ann wrote the ballet because:
    a. it would teach her about movement on the stage.
    b. she wanted to prove Popov was wrong.
    c. she never backed away from a challenge.
    d. she wanted a ballet for herself.

20. What is the ballet about?
    a. an adventure story about cattle drives.
    b. a love story set in the American Southwest.
    c. an English cowboy.
    d. how rodeos began.

21. In Ann's ballet:
    a. the heroine finds her horse.
    b. the animals get loose but are found.
    c. the heroine wins her father's ranch.
    d. the heroine wins the highest rodeo award.

22. In the ballet Ann wrote there is a great deal of:
    a. sneezing.
    b. laughing.
    c. riding and roping.
    d. singing.

23. When the ballet opened in New York City:
    a. everything went perfectly.
    b. the dancers were nervous and excited.
    c. the dust was so bad no one could see.
    d. steps were missed and girls clapped offbeat.

24. As the curtains closed, on the opening of Ann's ballet:
    a. she knew she had proved Popov was wrong.
    b. the audience was sneezing too hard to applaud.
    c. Ann began sneezing.
    d. the newspaper writers called the ballet a success.

25. After the opening in New York City, why did Ann feel she had to prove she was a dancer?
    a. The audience's applause resulted in twenty-two curtain calls.
    b. Not all the newspaper writers were pleased with the ballet.
    c. Popov thought Ann would never be a dancer.
    d. Her dancing was hidden by all the dust.

26. Which word describes Ann?
    a. comical
    b. determined
    c. heavy
    d. brilliant

"I'm flying," screamed ten-year-old Roy Travers. He was riding a box on wheels over a hand-made roller coaster. Four friends built the dangerous device, but only Roy had the nerve to try it. He climbed to the top again and swooped down much faster than the first time. Roy crashed to the floor and was carried to the house.

One thing Roy thought about as much as flying was taking pictures. His father decided an expensive camera might get Roy's mind off flying. The plan almost worked. Roy became a photographer, however he used his earnings to take flying lessons and buy a plane. He often took pictures from the air and won many prizes for his work. An airplane company offered Roy a job taking pictures of jets in flight and Roy accepted.

Cruising at 40,000 feet, Roy waits until a jet flies straight toward him before shooting his pictures. Every move had been plotted before take-off by the two pilots. Nevertheless, it is always possible for something to go wrong. Roy has a split second to aim the camera, focus, and click off pictures. Then there is no time for another picture. The two planes veer away from each other to avoid a mid-air crash. When Roy lands, the films are rushed to be developed. If the pictures are good, the engineers on the ground will have valuable information about the fighter's wings.

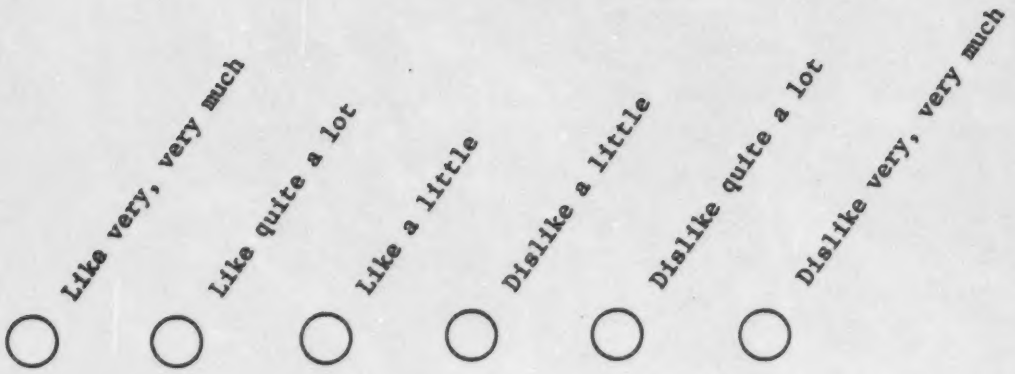
"You never get used to flying close to another plane and taking pictures. There are too many things that can go wrong either in your plane or the other fellow's," explained Roy. "Yet," he continued, "if the airplanes are to get better, the people who build them need us in the air to take pictures."

One day, Roy was flying a new jet. Four cameras were attached to each wing. One was placed in the nose of the plane. By pressing a trigger, all cameras would take pictures at the same time.

A flight of jets was ahead. Suddenly, a voice cut through the engine roar, "Your right engine's on fire." Roy pressed the fire control button, but nothing happened. He climbed rapidly and then went into a dive to put out the fire, but it grew worse. "What are you going to do?" shouted the voice from the radio.

Roy had no time to answer. He opened the hatch and aimed the plane toward open water, then jumped. As soon as he felt he was clear, he pulled the ripcord. Roy was falling head down when the chute risers whipped him upright and then the chute opened. It worked perfectly. He looked for the plane. Suddenly there was a bright flash and the plane disappeared into a thousand pieces.

Put a cross (X) in the circle which tells best how you feel about the selection you have just read.



Story 133

1. What "dangerous device" was Roy flying in?
   a. a box on wheels
   b. a homemade airplane
   c. a friend's airplane
   d. a roller coaster

2. How did Roy sound when he said, "I'm flying"?
   a. worried that he'd get hurt
   b. confident that he was safe
   c. excited and unaware of any danger
   d. frightened by the noise

3. The first time Roy Travers tried flying, he was:
   a. careful.
   b. successful.
   c. scared.
   d. scolded by his parents.

4. Why did Roy have to be carried to the house?
   a. He broke the roller-coaster
   b. The box caught on fire
   c. He crashed to the floor
   d. The roller-coaster fell on him

5. What did Roy's father think of his son's desire to fly?
   a. pleased because the job paid well
   b. pleased because it showed his son was smart
   c. mad because of the mess Roy left behind him
   d. worried because of the dangers

6. What did Roy think about as much as flying?
   a. building roller-coasters with his friends
   b. taking pictures
   c. building jet planes
   d. parachuting out of planes

7. Roy's father gave Roy:
   a. an airplane.
   b. a safer roller coaster.
   c. an expensive camera.
   d. the borrowed camera to use.

8. What plan almost worked?
   a. flying off the handmade roller coaster
   b. buying an expensive camera
   c. frightening Roy with a jet ride
   d. making money with photography

9. Roy won prizes for:
   a. pictures he took while flying.
   b. doing tricks which took a lot of courage.
   c. pictures of plane crashes.
   d. parachuting from planes.

10. What enabled Roy to become a pilot and buy a plane?
    a. working for an airplane company
    b. selling all his cameras
    c. money earned from photography
    d. money earned from building roller coasters

11. What job did Roy get at the airplane company?
    a. building airplanes
    b. test flying new jets
    c. taking pictures of jet crashes
    d. taking pictures of planes in flight

12. What experience did Roy have which helped him get his job with the airplane company?
    a. flying off roller coasters
    b. flying planes
    c. designing and building planes
    d. photography and flying

13. Why was Roy's job with the plane company important?
    a. Nobody knows for sure if the planes are working properly
    b. He provided valuable information to the builders
    c. The insurance companies need proof of accidents
    d. New planes must be tested for safety

14. What do people at the plane company look for in Roy's pictures?
    a. They study the wings of the fighters
    b. They study whether the fighters fly level
    c. They measure the distance between the two planes
    d. They study the engines on the other plane

15. What was dangerous about the job Roy had with the airplane company?
    a. Roy had to change the film in the camera while flying
    b. New planes often don't work properly
    c. The two planes had to fly directly at each other
    d. He had to press the trigger in his plane first

16. Why was there only a short time to take the pictures?
    a. The camera took only 3 pictures
    b. The pilots had planned it before they took off
    c. The pictures had to be taken just before the planes turned
    d. The cameras didn't work well at 40,000 feet up in the air

17. Roy is an excellent flier because he:
    a. has no time to answer questions.
    b. can put out engine fires.
    c. is able to steer the plane away and save himself.
    d. can do many tricks while flying.

18. What did Roy think of his job?
    a. He felt safe and comfortable
    b. He never thought he'd get used to it
    c. He didn't like the danger
    d. The danger was fun

19. Where were the cameras attached on the new jet Roy was flying?
    a. on the wings.
    b. on the wings and tail section.
    c. on the wings and nose section.
    d. on the tail and nose section

20. What would happen when Roy pressed the trigger in his plane?
    a. A signal would be given to the other plane.
    b. All the cameras would work at the same time.
    c. The hatch on the plane would open
    d. The plane veered right

21. How did Roy know there was trouble with the new jet?
    a. A voice on the radio said, "your right engine's on fire."
    b. A voice on the radio said, "turn right or we will crash."
    c. He saw his cameras weren't working
    d. He saw the right engine on fire

22. When Roy was first told that his plane was in trouble, he:
    a. got frightened.
    b. pressed the fire control button.
    c. climbed quickly and went into a dive.
    d. opened the hatch and aimed the plane toward open water.

23. Why did the plane gain altitude and then dive quickly?
    a. to avoid hitting the other planes
    b. to reach the airport sooner
    c. to unjam the controls.
    d. to put out the fire

24. Why did Roy aim the plane toward open water?
    a. Fewer people would probably be hurt
    b. The water would put out the fire
    c. The airport was somewhere near the water's edge
    d. He could save the plane if it hit the water

25. When Roy jumped from the plane, he proved he was:
    a. sensible.
    b. a coward.
    c. careless.
    d. panicing.

26. When Roy looked for the plane after he had jumped:
    a. he saw the two planes crash.
    b. he saw his plane hit the water and explode.
    c. there was a bright flash and the plane disappeared.
    d. he heard a loud explosion when the engine blew up.

The "Chez Petit" was a small restaurant in the middle of Paris. It was famous for two things—its onion soup and a small girl named Linda Petit who wore a pair of ballet slippers several sizes too big for her. Each evening she danced and clowned around the restaurant. People enjoyed watching Linda and threw coins for her to gather.

Linda had been surrounded by dancing and talk of dancing from the time she was born. Her father had been a ballet dancer and her mother was a modern dancer.

From the day Linda's mother brought home a pair of ballet slippers, her feet were never still. She made up new dances every day and tried them out every night at the restaurant. Her father was afraid at first that patrons would be annoyed. He soon found out that Linda's dancing was actually bringing in new customers.

When Linda was seventeen, she surprised her family by announcing that she was going to become a doctor. Meanwhile, she landed a summer job as a chorus girl in a Paris night club. By the time school started in the fall, Linda made up her mind to become a dancer.

The kind of dancing she wanted was ballet. She picked one of the best teachers and continued to work to pay for her lessons. After several months of study she began to dance with the "Young Ballet".

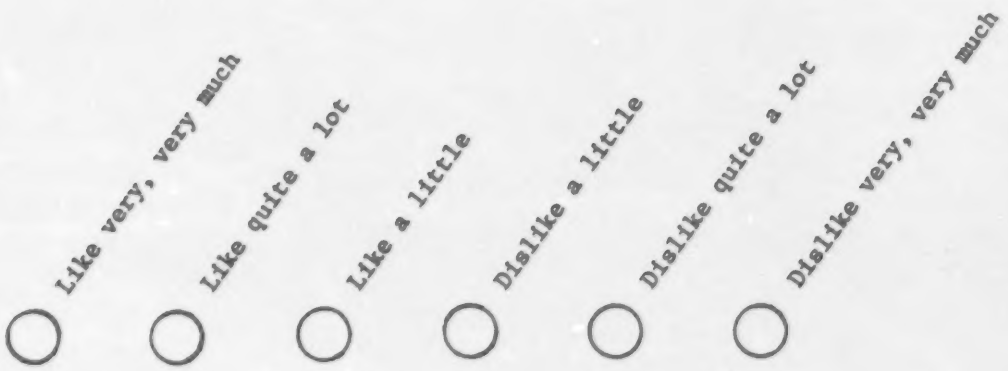
Linda was very busy. In the mornings she took lessons. In the afternoon she rehearsed for her job and also with the Young Ballet group. Finally, in the evening she gave her performance. Some nights she danced twice, once, in the ballet theatre and then at the night club.

When she was eighteen, Linda joined the Lyon Ballet. She was given her first solo, that of a deer. In the morning of the opening, someone discovered that no one had made a costume for the deer. All that day, Linda rehearsed while being fitted. The last stitch was sewn just before she went on stage to dance. "As soon as I got out on the stage, I felt I could dance all night," she said, "but, up to that moment, I had one wish—that I was in medical school."

At nineteen, Linda joined a touring company going to the United States. In New York City, reviewers called her dancing "unforgettable". She was homesick, and though her salary was doubled, she returned to Paris.

In Paris she and twelve young people rented a theatre to perform their own ballets. Peopl jammed the theatre, but the group needed more money to continue.

Put a cross (X) in the circle which tells best how you feel about the selection you have just read.



Story 124

1. What was the "Chez Petit"?
   a. a ballet company
   b. a night club
   c. a restaurant
   d. a theatre

2. What two things was the restaurant famous for?
   a. good food and good dancing
   b. onion soup and Linda
   c. excellent service and atmosphere
   d. dining and entertainment

3. Linda's dancing shoes were:
   a. given her by her mother
   b. several sizes too big for her
   c. her mother's old ones
   d. made of the best material

4. Each evening what did Linda do at the restaurant?
   a. worked as a waitress
   b. worked as cashier
   c. danced and clowned around
   d. danced with her parents

5. The people in the restaurant showed they liked the dancing by:
   a. applauding.
   b. throwing coins.
   c. buying her proper shoes.
   d. telling her mother.

6. How was Linda brought up to know about dancing?
   a. She practiced every night at the restaurant.
   b. She earned money by dancing.
   c. Her parents were dancers.
   d. She read a lot about dancing.

7. While dancing in the restaurant, every day Linda:
   a. took lessons from her mother.
   b. made up new dances.
   c. brought in new customers.
   d. thought of New York City and being famous.

8. Linda's father was afraid that:
   a. the dancing would annoy the patrons.
   b. the dancing might attract other dancers.
   c. Linda wouldn't learn to dance well.
   d. Linda would dance well enough to leave home.

9. What was the effect of Linda's dancing in the restaurant?
   a. Fewer customers were coming.
   b. The restaurant changed into a theatre.
   c. More customers brought their children.
   d. New customers were brought in .

10. How did Linda surprise her family?
    a. She announced she wanted to be a doctor.
    b. She began working in a night club.
    c. She joined the Lyon Ballet.
    d. She went to New York.

11. What summer job did Linda get?
    a. assistant to the instructor for the Young Ballet
    b. chorus girl in a Paris night club
    c. dancing with the Young Ballet
    d. teaching ballet at the restaurant

12. How did Linda pay for her ballet lessons?
    a. from the money made at the restaurant
    b. sewing costumes at the theatre
    c. from teaching
    d. by dancing in a night club

13. After several months of study Linda began to dance :
    a. her own dances.
    b. as a chorus girl in a Paris night club.
    c. with the Young Ballet.
    d. in New York.

14. When Linda began dancing with the Young Ballet:
    a. she toured the United States.
    b. she was dancing day and night.
    c. she had to give up her summer job.
    d. she also had lessons twice a day.

15. Some evenings Linda danced for the Young Ballet and:
    a. danced in the restaurant.
    b. took lessons.
    c. sewed costumes at the theatre.
    d. danced in the nightclub.

16. Linda joined the Loyn Ballet:
    a. after dancing with the Young Ballet.
    b. when she left the restaurant.
    c. after she had gone to New York.
    d. before dancing with the Young Ballet.

17. Playing the part of a deer was important to Linda because:
    a. she had made up the dance herself.
    b. it was her first solo.
    c. she had practiced it so long.
    d. then she could go to the United States.

18. On the morning the ballet of the deer was to open:
    a. Linda announced she was going to medical school.
    b. the costume for the deer hadn't been finished.
    c. Linda began working in a Paris night club.
    d. Linda became homesick for Paris.

19. Just before Linda went on stage to dance the part of the deer:
    a. she rehearsed the difficult moves.
    b. her costume was finished.
    c. her salary was doubled.
    d. Linda's parents arrived at the theatre.

20. Before the ballet of the deer, Linda's one wish was that:
    a. she was in medical school.
    b. she was back in Paris.
    c. she was still with the Young Ballet group.
    d. she had not left the restaurant.

21. Linda came to the United States:
    a. before she had given her first solo.
    b. after she had danced with the Lyon Ballet.
    c. to get her salary doubled.
    d. so she could perform her own ballets.

22. The reviewers in the United States called Linda's dancing:
    a. unforgettable.
    b. immature.
    c. original.
    d. exciting.

23. Linda returned to Paris because:
    a. she was homesick.
    b. she wanted to perform her own ballets.
    c. she had gotten into medical school.
    d. she could join a new group of dancers.

24. When Linda returned from the United States:
    a. her salary was doubled.
    b. she joined the Lyon Ballet.
    c. she and others rented a theatre.
    d. she began medical school.

25. Linda joined a group of twelve young people in order to:
    a. perform their own ballets.
    b. dance in a night club.
    c. begin giving lessons.
    d. begin a modern dance group.

26. How did the people in Paris react to Linda's dancing after she returned from the United States?
    a. They called it "unforgettable".
    b. They jammed the theatre to see the ballets.
    c. They wanted her to teach their children.
    d. They thought she had changed.

GAMES AND ACTIVITIES

NAME _____

AGE _____

SEX _____

SCHOOL _____

INSTRUCTIONS FOR GAMES AND ACTIVITIES:

Here are two sets of games and activities. If you like a game or activity, you would choose the answer a) like. On the answer sheet, look for the row of answer spaces that is numbered the same as the question. If you like the game or activity, you would fill in the oval marked (A). If you think you would not like the game or activity, your answer would be b) dislike. Once again you would look for the row on the answer sheet that is numbered the same as the question. You would fill the oval marked (B).

Notice that the numbers on the answer sheet go across. Please place all of your answers on the answer sheet. DO NOT WRITE ON THIS QUESTION SHEET.

You have been given two answer sheets. Please use one for Games and Activities #1 and the other for Games and Activities #2. Both are done in exactly the same way.

Please place #1 beside your name on the answer sheet you use for Games and Activities #1. Place #2 beside your name on the answer sheet you use for Games and Activities #2.

1.	dolls	a) like	b) dislike
2.	dressing up	a) like	b) dislike
3.	houses	a) like	b) dislike
4.	store	a) like	b) dislike
5.	school	a) like	b) dislike
6.	church	a) like	b) dislike
7.	actors	a) like	b) dislike
8.	actresses	a) like	b) dislike
9.	stoop tag	a) like	b) dislike
10.	ring-around-the-rosy	a) like	b) dislike
11.	London bridge	a) like	b) dislike
12.	farmer in the dell	a) like	b) dislike
13.	in & out the window	a) like	b) dislike
14.	drop the handkerchief	a) like	b) dislike
15.	mulberry bush	a) like	b) dislike
16.	hopscotch	a) like	b) dislike
17.	jump rope	a) like	b) dislike
18.	jacks	a) like	b) dislike
19.	Mother, may I?	a) like	b) dislike
20.	dancing	a) like	b) dislike
21.	sewing	a) like	b) dislike
22.	cooking	a) like	b) dislike
23.	knitting	a) like	b) dislike
24.	crochet	a) like	b) dislike
25.	cartwheels	a) like	b) dislike

GAMES AND ACTIVITIES # _____

PLEASE USE A NEW ANSWER SHEET TO DO THE NEXT TASK.

GAMES AND ACTIVITIES # 1

1.	bandits	a) like	b) dislike
2.	soldiers	a) like	b) dislike
3.	cowboys	a) like	b) dislike
4.	cops & robbers	a) like	b) dislike
5.	cars	a) like	b) dislike
6.	spacemen	a) like	b) dislike
7.	marbles	a) like	b) dislike
8.	bows & arrows	a) like	b) dislike
9.	throw snowballs	a) like	b) dislike
10.	darts	a) like	b) dislike
11.	wrestling	a) like	b) dislike
12.	baseball	a) like	b) dislike
13.	football	a) like	b) dislike
14.	basketball	a) like	b) dislike
15.	boxing	a) like	b) dislike
16.	shooting	a) like	b) dislike
17.	fishing	a) like	b) dislike
18.	hunting	a) like	b) dislike
19.	using tools	a) like	b) dislike
20.	climbing	a) like	b) dislike
21.	make radio	a) like	b) dislike
22.	model aeroplane	a) like	b) dislike
23.	toy trains	a) like	b) dislike
24.	working machines	a) like	b) dislike
25.	build forts	a) like	b) dislike

Appendix B

Introduction of Researcher and Project

Hi Grade 5. My name is Mrs. Gardiner. I am a student at the University in Saskatoon and I am in your school to do some research that will help learn about some of the things boys and girls like to do and in addition to learn more about the kinds of things that will help children learn to read more easily.

You are the most important part of that research, because by doing the tasks that I am going to show you in the next little while, you will teach us all of those things.

Instructions to Boys and Girls (Pass out the material)

Before we begin you will need a pencil and an eraser. Your desk should be clear except for the pencil and eraser and the things you've just been given.

Let's check to make sure you have everything: You should have some papers held together by a paper clip like this and two answer sheets like this. (Hold up materials.) Has everyone got everything?

Take the paper clip off. You will need the green sheet, the first booklet, this one (hold up M-F Scales) and the two answer sheets. Replace the paper clip and put the rest on the corner of your desk out of the way.

Answer Sheets

Let's look at the answer sheets: Notice on one side there are numbers in the little ovals and on the other side the ovals have letters in them. Has everyone found the side with letters? Place your name in the proper space on the side where there are letters in the ovals. Do the same thing with the other answer sheet. Write your name on the side with letters in the ovals.

Next find the green piece of paper. Place your name, age, school, and sex, that is whether you are a boy or a girl in the proper spaces.

Games and Activities

Let's look at the booklet next. I want you to follow very carefully as I read the directions to you. Is everyone ready? (Demonstrate on board as the directions are read.)

Are there any questions? Please remember that you are to go across the answer sheet. When you have finished, you may read or do anything as long as it's quiet. Please remain at your desk and do not disturb anyone else. I shall come around to make certain everyone is filling in the answer sheet correctly. Please check periodically to make certain that the question you are doing is numbered the same as the row of answers on the answer sheet. If there are no questions you may begin. Work as quickly as you can.

Stories and Questions

This time you have been given four answer sheets. For each of them find the side with letters in the ovals. Write your name in the proper space on the side with letters in the ovals.

Next put your name, age, school and sex in the proper spaces on the yellow sheet.

Booklet

Let's look at the booklet. You are going to read four stories. For each story you read, you will do two things: 1) tell how you liked it, 2) then answer some questions—without looking back at the story.

Turn to the second page in the booklet. It looks like this: Please follow as I read the instructions. (See the Like-Dislike Scales.)

You have six choices to tell how you liked the story. Please mark only one of them.

Questions

Turn to the next page and look at the questions. You will notice that you have four choices for each question. You will choose the best answer and mark it on the answer sheet the same way you did before. Let's review:

Look for the row of answers numbered the same as the question. If you think the best answer is (a), you will fill in oval "a"; if you think the best answer is (b), you will fill in oval "b"; if answer (c) is the best one, you will fill in oval "c" and so on.

There are four stories and four answer sheets. Each time, you start a new story, use a new answer sheet. Each time place the name of the story anywhere at the top of the answer sheet. Remember to go across—not up and down. Please do not write on the questions. Check periodically to make certain the question you're doing is numbered the same as the row of answers on the answer sheet.

YOU MAY NOT LOOK BACK AT THE STORY TO ANSWER THE QUESTIONS!

O.K., look at the title of the first story in your booklet. Write it on the top of your answer sheet.

Look on the blackboard. You will notice these words in capital letters: WHEN YOU HAVE FINISHED READING. There are some instructions which follow. Please read and follow these instructions each time you finish reading a story.

WHEN YOU HAVE FINISHED READING:

1. Turn the page and mark the <u>one</u> set (group) of words that tell best how you liked the story. REMEMBER to make only ONE mark.

2. Turn the page to the questions. Take a NEW answer sheet. Write the name of the story on the sheet.

3. Choose the ONE best answer for each question. REMEMBER: DO NOT LOOK BACK AT THE STORY.

4. Work as quickly as you can.

If there are no questions, you may begin. Work as quickly as you can. As soon as you have read one story, have told how you liked it and have answered the questions, move right on to the next one. Check the instructions on the board each time to make certain you have done everything.

When you have finished, please put everything together with the paper clip and hand it in to me. Then find something quiet to do at your desk until everyone has finished.

Appendix C

Table C

Testing Times of Individual Classrooms

Teacher	M-F Sclaes	Stories	Total
A	10 min.	84 min.	94 min.
B	15 min.	70 min.	85 min.
C	12 min.	74 min.	86 min.
D	11 min.	70 min.	81 min.
E	14 min.	80 min.	94 min.
F	13 min.	80 min.	93 min.
G	11 min.	85 min.	86 min.
Average	12.29 min.	76.14 min.	88.43 min.

Appendix D

Table A

Discriminating Power of Items on Femininity Scales

	Pooled Variance Estimate		
	T Value	Degrees of Freedom	2-Tail Prob.
1. Dolls	-9.16	149	0.000*
2. Dressing up	-8.35	149	0.000*
3. Houses	-6.54	149	0.000*
4. Store	-6.16	149	0.000*
5. School	-8.28	149	0.000*
6. Church	-2.42	149	.017*
7. Actors	1.05	149	.296
8. Actresses	-6.83	149	0.000*
9. Stoop tag	-0.90	149	.370
10. Ring-around-the-rosy	-3.02	149	.003*
11. London bridge	-3.12	149	.002*
12. Farmer in the dell	-3.95	149	0.000*
13. In & out the window	-1.72	149	.088
14. Drop the hankerchief	-0.48	149	.631
15. Mulberry bush	-0.32	149	.747
16. Hopscotch	-6.65	149	0.000*
17. Jump rope	-8.85	149	0.000*
18. Jacks	-0.70	149	.482
19. Mother, may I?	-3.13	149	.002*
20. Dancing	-4.02	149	0.000*
21. Sewing	-12.02	149	0.000*
22. Cooking	-4.16	149	0.000*
23. Knitting	-7.19	149	0.000*
24. Crochet	-2.76	149	.007*
25. Cartwheels	-4.03	149	0.000*

* $p<.05$

Table B

Discriminating Power of Items on Masculinity Scales

	Pooled Variance Estimate		
	T Value	Degrees of Freedom	2-Tail Prob.
1. Bandits	3.74	149	0.000*
2. Soldiers	4.35	149	0.000*
3. Cowboys	2.45	149	.015*
4. Cops & robbers	2.75	149	.007*
5. Cars	3.22	149	.002*
6. Spacemen	2.51	149	.013*
7. Marbles	0.01	149	.992
8. Bows & arrows	4.76	149	0.000*
9. Throw snowballs	1.83	149	.069
10. Darts	2.04	149	.043*
11. Wrestling	4.27	149	0.000*
12. Baseball	1.23	149	.221
13. Football	3.96	149	0.000*
14. Basketball	1.91	149	.058
15. Boxing	4.82	149	0.000*
16. Shooting	3.82	149	0.000*
17. Fishing	2.57	149	.011*
18. Hunting	5.27	149	0.000*
19. Using tools	3.32	149	.001*
20. Climbing	2.02	149	.045*
21. Make radio	3.66	149	0.000*
22. Model aeroplane	5.86	149	0.000*
23. Toy trains	3.03	149	.003*
24. Working machines	4.47	149	0.000*
25. Build forts	2.66	149	.009*

* $p<.05$

Appendix E

Table D

Comprehension: Means and Standard Deviations for Each Story

	Male		Female		Combined Sample	
Story	Mean	S.D.	Mean	S.D.	Mean	S.D.
Ann Banks	18.5	5.320	19.1	5.170	18.8	5.248
Linda Petit	17.7	4.737	17.1	5.426	17.7	5.023
Don Sheldon	17.8	4.664	17.1	4.059	17.5	4.416
Roy Travers	18.8	4.482	18.3	4.506	18.6	4.484

Table E

Like-dislike Ratings of Sex-typed Content:
Boys, Girls, Sexes Combined

	Boys		Girls		Combined Sample	
Story Content	Mean	S.D.	Mean	S.D.	Mean	S.D.
Male	5.316	0.8038	4.3672	1.055	4.914	1.029
Female	3.6954	1.0980	4.9840	0.7236	4.242	1.149

Appendix F

JUBILEE YEAR

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COLLEGE OF EDUCATION
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DEPARTMENT OF
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Dr. Brian Sutton-Smith
Department of Psychology
Teachers' College, Columbia University
New York City

Dear Dr. Sutton-Smith:

This letter is being written in reference to the masculinity-femininity scales for children originally developed by you and Dr. Rosenberg (The measurement of masculinity and femininity in children. Child Development, 1959, 30, 373-380) and subsequently extended and revalidated (The measurement of masculinity and femininity in children: An extension and revalidation. Journal of Genetic Psychology, 1964, 104, 259-264).

Based on my reading, I think your scales will prove a suitable instrument and I look forward to receiving permission to use them. The masculinity-femininity scales would be used in a study related to the teaching of reading to identify subgroups in two independent studies which have been designed to determine how grade five boys' and girls' interest in sex-stereotyped content affects their reading comprehension. Needless to say, the instrument used in such a study must discriminate subsamples. Do your scales have sufficient power to do this? Do you know of studies in which the scales have been used in similar ways? NO

Granted
B. Sutton-Smith

Who knows
I doubt it

It has been shown that boys, on the average, react negatively to female content and girls similarly respond to male content, though their negativism is less pronounced. It has also been shown that better readers are less influenced by their interests than are poorer readers. We are seeking to discover if there is a masculinity-femininity factor which could also influence behavior, namely are there intrinsic patterns of behavior your scales might reveal which can be related to reading achievement and the effect interest has on it?

?

I should like to receive a copy of your revised scales and administration instructions for their use. Additional information concerning cautions about the results we might find would be appreciated.

Sincerely,

Sandy Gardiner

Sandy Gardiner

UNIVERSITY of PENNSYLVANIA
PHILADELPHIA 19104

Graduate School of Education
3700 Walnut Street

Dear Sandy,

You are on your own with
more questions. Here's a
wild chance I suppose —

Regards
Robert Smith

Appendix G

Table F

Growth in Populations of Towns Induced in the Study*

	Male (1981)	Female (1981)	Total (1981)	Total (1976)	% Growth
Dinsmore	205	195	400	400	0%
Elrose	310	315	625	614	1.63%
Eston	670	745	1415	1354	4.36%
Kindersley	1985	1980	3965	3523	12.66%
Kyle	270	245	515	499	3.41%

* Census Canada 1981